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*Forty common birds of
West Virginia*

Earle Amos Brooks

HARVARD UNIVERSITY.



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ARBOR AND BIRD DAY MANUAL

OUTLINES

BY

M. J. ABBEY

FORTY COMMON BIRDS OF WEST VIRGINIA

BY

EARL A. BROOKS



MARCH 26, 1915

PUBLISHED BY

DEPARTMENT OF FREE SCHOOLS

M. P. SHAWKEY, State Superintendent

CHARLESTON, W. VA.

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TORONTO, CANADA



OUR STATE FLOWER (*Rhododendron*).

West Virginia
School Agriculture

Vol. V.

FEBRUARY, 1915

No. 66

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M. J. ABBEY

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—FOR—
EXTENSION DEPARTMENT
COLLEGE OF AGRICULTURE, WEST VIRGINIA UNIVERSITY,
MORGANTOWN

Sent Free to All Teachers and School Officers Making Application.

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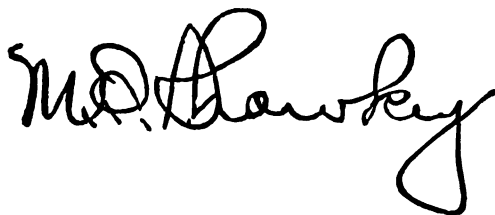
TRIBUNE PRINTING CO., CHARLESTON, W. VA.

To Teachers and Pupils:

In recent years the school has opened the door for two purposes: to let in the people to see what the school is doing, and to turn out the pupils to see what is going on in the world. The teacher who does not work to bring about these movements in both directions has not caught the spirit of the times. The *Arbor and Bird Day Manual* is intended to invite pupils to the big out-of-doors, and to guide them in interesting and profitable study of the trees and the trees' companions—the birds.

The material of this volume is very valuable for it gives thoroughly tried, practical directions for the planting, care and study of trees, and an unusual amount of new material about our birds. Rev. Brooks, the author of the *Bird Manual*, made these first hand observations at personal sacrifice and considerable expense to the Agricultural Extension Division of our University. Through the co-operation of the authors, the University and the Department of Schools, the state is able to offer this rare book to the teachers and schools. Its return value to the state will depend upon the use which the pupils and teachers make of its contents. I take pleasure in leaving the book and the obligation with you.

Very truly yours,

A handwritten signature in cursive script, reading "M. D. Hawkey". The signature is written in dark ink and is positioned below the typed name.

THE NATURE LOVER'S CREED.

I believe in Nature, and in God's out-of-doors.

I believe in pure air, fresh water and abundant sunlight.

I believe in the mountains, and as I lift up mine eyes to behold them, I receive help and strength.

I believe in the forests where the aged may renew their youth, and the young gather stores of wisdom which shall abide with them forever.

I believe in the highland springs and lakes, and would have noble trees stand guard around them; upon the mountain sides I would spread a thick carpet of leaves and moss through which the water might find its way into the valleys and onward to the ocean.

I believe in protecting the birds and the animals that live amidst the trees, and the ferns and mosses and blossoming plants.

I believe in all the beautiful things of nature, and would preserve, protect and cherish them.

**"Come let's to the fields, the meads, and the mountains,
The forests invite us, the streams and the fountains."**

—By Mrs. P. S. Peterson.

ARBOR AND BIRD DAY.

Once each year the school children of the United States are called upon to observe Arbor and Bird Day. We fear that too many teachers and pupils look upon it as a day that has little significance in the educational system. We believe that the founders of this day had in mind something more than the mere planting of a tree, a picnic, or a romp in the woods. The tree planted on the school grounds will scarcely have passed its period of youth when the planters have long since reached manhood and even old age. Only a few of those who take part in this year's Arbor Day exercises will even indirectly enjoy the benefits of trees and vines which they plant. This effort to go out of one's self to do something for others kindles a wholesome unselfishness and stimulates endeavor. A larger view of life is taken: the great text book of Nature is opened up. Wordsworth has well said,

"Nature never did betray
The heart that loved her; 'tis her privilege,
Through all the years of this our life, to lead
From joy to joy; for she can so inform
The mind that is within us, so impress
With quietness and beauty, and so feed
With lofty thoughts, that neither evil tongues,
Rash judgments, nor the sneers of selfish men
Shall e'er prevail against us, or disturb
Our cheerful faith, that all which we behold
Is full of blessings."

The Arbor and Bird Day Manual this year is intended as a guide to the study of plant and bird life. Its usefulness does not end with the observance of Arbor and Bird Day, but is intended for use in the school room during the preceding and following months. Make the most of it. Lead children to a more intimate acquaintance with Nature.

SUGGESTED PROGRAM FOR ARBOR AND BIRD DAY.

Song.....	School
Scripture Reading—The One Hundred and Fourth Psalm—	Teacher
Reading of the Proclamations of the Governor and the State	
Superintendent of Schools	Teacher or Older Pupil
Recitation—Selected.....	Pupil
Essay—Our Feathered Friends	Pupil
Read the Nature Lover's Creed in Concert.....	School
Essay—The Value of Trees	Pupil
Song—Selected.....	School
Quotations, declamations and suggestions	
Readings.....	By various Pupils
Short Talks by Patrons of the School	
a. A Farmer's Appreciation of the Quail.	
b. The Relation of Forests to Agriculture.	
c. Beautifying Home and School Grounds.	
Song—America.....	School
Planting the Tree on the School Grounds	School

TREE STUDY.

The purpose of tree study is to acquaint the child with the common trees about him, their life histories and work, and man's dependence upon them. Successful tree study means that the child must increase his tree vocabulary from year to year. At the end of his first year in school he should be able to recognize at least five common trees. A thorough study according to the outline given below should be made of one tree. Use this one as a standard of comparison in studying other trees. The first outline given is for the primary children.

A.—Topic—Trees

B.—Analysis

1. Shape. Tall, massive trunks, wide or narrow top, drooping limbs or limbs pointing upward.
2. Leaves. Smooth, rough or hairy, color on both surfaces, shape, margin, parts, value and use, falling of leaves.
3. Twigs. Surface, arrangement of leaves, tiny buds, where the buds are found, purpose.
4. Blossoms. Purpose, color, arrangement.
5. Seeds. Uses. Collect and germinate.
6. Uses. Shade, fruit, lumber, fuel, home of insects and birds.

C.—Method of Presentation.

Take the children out of doors and ask them to select a tree which they would like to study, a maple, for example. If possible direct them to one of the trees mentioned for the grade. Ask questions which will ascertain why this particular tree is selected. What is its shape? Is it the same width from the bottom to the top? Does it look like an umbrella or a church spire? What gives it this shape? Will it give us more or less shade than the tree next to it? Why? Provide each child with a leaf. How does it feel? Why? Are both sides of the same color? How are these leaves (maple) different from those of other trees you have seen? Can you find any leaf on this tree which has a shape different from the leaf you have? All leaves on the maple tree are of the same shape. Think of something that is shaped like the maple leaf. Stand under the tree and note if you see the sky. Why can you not see the sky? Do you see any leaves that are entirely shaded by others? What are all the leaves trying to get? Call attention to the parts but do not give them their technical names. Bring out the idea that shade and beauty are given by leaves; that leaves are the workers for the plant and as the plant rests in the winter there is no use for leaves.

In teaching the work of twigs, each child should be provided with a twig, the teacher directing the observations. The study of the blossom should be from the standpoint of beauty. The topics—seeds and uses—require no explanation. Little poems and stories should be introduced.



THE VALUE OF A SHADE TREE CAN SCARCELY BE OVER ESTIMATED; IT DELIGHTS THE EYE, COOLS AND PURIFIES THE SURROUNDING AIR, COMFORTS AND REVIVES THE WEARY WORKER AND ADDS CHARACTER AND GRACE TO THE LANDSCAPE.

How to Plant a Tree.

Successful tree planting depends upon the following:

1. The tree must be adapted to the purpose which it is to serve.
2. It must be adapted to its new home.
3. It must be properly planted.

If a tree is planted for ornament and shade, one with a large branching top, such as the maple or elm, should be selected. If a fruit tree is to be planted, a good variety which grows well in the locality should be selected. Soil and exposure must be considered in transplanting a tree. The soil of the new home should be as nearly like that of the old home as possible. Never take a tree from a good soil to a poor soil. Always select a better soil. In time, the tree will adapt itself to the soil, but much valuable time is lost and the tree is often stunted. Trees that are grown in the forests or in deep

ravines are accustomed to protection and find it difficult to withstand storms and severe winds. When possible, select trees that are grown in the open; those that have a well-distributed, rounded top. In transplanting, observe the following rules:

1. In removing the tree from its old home, do not disturb any more roots than absolutely necessary. Dig at least two and one-half feet from the trunk. Dig entirely around the tree before attempting to remove it.

2. The tree should be transplanted at once. Do not expose the roots to the sun or wind for any length of time. If it is necessary to carry the tree some distance, water should be sprinkled over the roots.

3. Dig a hole large enough to permit all the roots to lie in their natural positions. Work the dirt in about the roots with the fingers. The soil should be moistened after it is well worked about the roots. Fill the hole with fine dirt, pressing it down firmly to within four inches of the top. The last four inches should be loose to permit aeration and to prevent the loss of moisture.

4. Do not plant too deep. After the ground has settled, the tree should be at approximately the same depth as in its old home.

5. Keep weeds and grass from the young tree for the first two or three years. Growth would be more rapid if the ground about the tree were cultivated for several years.

6. If the school ground is unprotected by a fence, four posts should be driven in the ground and two boards nailed to each post.

7. If the season is dry, the tree should be watered occasionally.

FORESTRY.

A Reading Lesson.

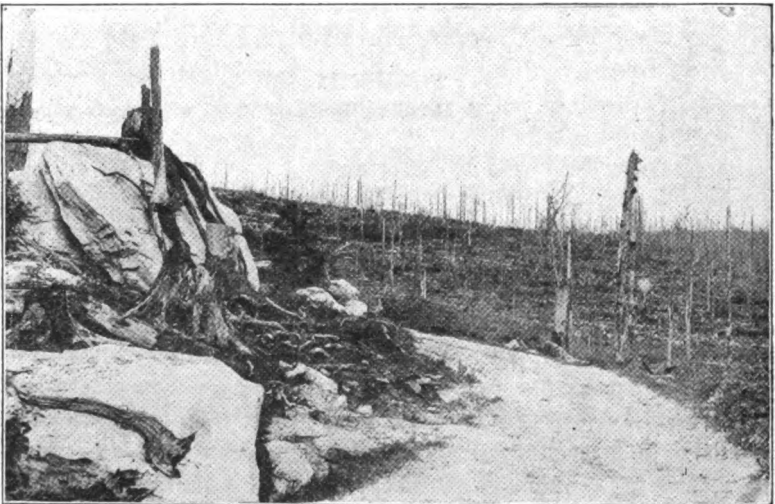
Everybody, both young and old, should cultivate an interest in forestry; they should learn to love trees and to plant them in every vacant space where they can be grown. In that way they will add to the beauty of their homes and the attractiveness of the community. They will be doing something which will please others as well as themselves, something which will be good in their day and generation and in the generations to come. Our country was greatly favored by nature with forests. When our forefathers landed upon the Atlantic coast the forests were filled with Indians and wild animals. They were obliged to subdue their natural foes and cut down the forests so that they could erect their log cabins and churches, build cities, cultivate fields, reap harvests, and construct great railroads. They endured many hardships in carving their homes out of the wilderness. In many instances they went too far in destroying forests; they cut many trees from hillsides where they should have been left to protect the soil, which, without the trees, was washed away and the land destroyed. We now

have many large areas which have been entirely robbed of their forests. The few forests we still have are rapidly disappearing, and unless we take some steps to conserve them, we will become a treeless community.

Many people do not plant trees because it requires so many years for them to grow to maturity; there are more who are selfish and not willing to go to the trouble of planting trees because they feel that they will not get much benefit out of them. The right view for us to take is that we should do those things which not only help ourselves, but which also add to the comfort and happiness of those who come after us. Boys and girls who plant trees will live to enjoy them, and at the same time they will have the satisfaction of knowing that they are doing something which will benefit others for many years to come.

A treeless country is not good to look upon, and we naturally pity folks who can not enjoy the companionship of the trees. Trees are our friends. They protect us in the heat of the summer with their shade; they make us pleasant homes and add to our comfort in many other ways.

CHARLES W. FAIRBANKS.



A SCENE TOO COMMON IN WEST VIRGINIA.

Forest fires have denuded thousands of acres of rough hill lands that once formed reservoirs to store moisture for the surrounding country.

THE FRUIT TREE.

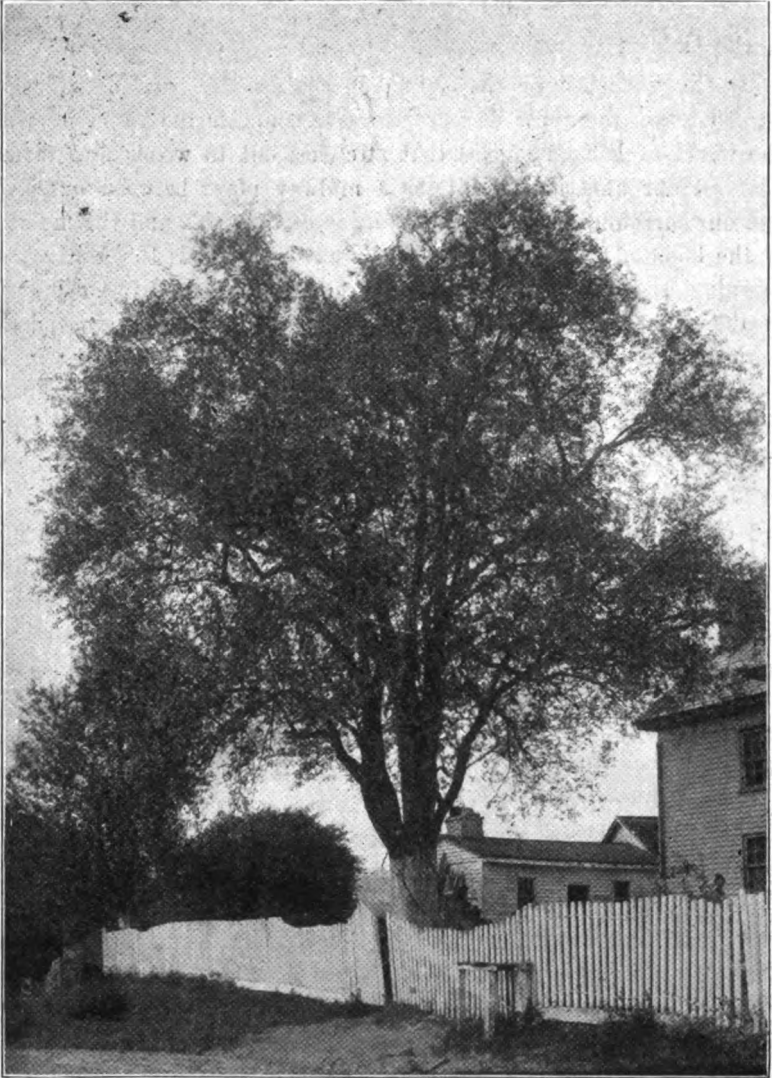
A fruit tree is a symbol of home and comfort and good cheer. It is the emblem of good works.

By the woodshed or the pump, or against the barn or over the garden fence, the apple tree or pear tree connects the residence with the world of life and space that stretches out to woods and farms. We rest our affections on it, as a midway place between ourselves and our surroundings. It is the warden of the fields and the monitor of the home. It is an outpost of the birds. It feels the first ray of morning sunshine. It proclaims every wind. It drips copiously in the rain. Its leaves lie on the grass when the year goes down into the long night of winter. It stands its ground fearlessly in pinch of cold and stress of storm. And in the spring its brightening twigs and swelling buds reveal the first pulse in the reviving earth. Every day of the year is in its fabric, and every essence of wind and sun and snapping frost is in its blossom and its fruit.

I often wonder what must have been the loss of the child that had no fruit tree to shelter it. There are no days like the days under an old apple tree. Every bird of the field comes to it sooner or later. Perhaps a humming bird once built on the top of a limb, and the marks of the old nest are still there. Strange insects are in its knots and wrinkles. The shades are very deep and cool under it. The sweet smells of spring are sweetest there. And the mystery of the fruit that comes out of a blossom is beyond all reckoning, the magic growing week by week until the green young balls show themselves gladly among the leaves—the leaves that hold the tang of summer in them. And who has not watched for the first red that comes on the side that hangs toward the sun, and waited for the first fruit that was soft enough to yield to the thumb! Verily, the old apple tree carries all the memories of the years.

The worth of a fruit tree is very real, quite beyond any figuring in dollars and pounds. I think we do not know how good a teacher it has been or how much it has steadied the lives of many folk.

And an orchard is only a family of fruit trees. Orchards are also very real, but I hope that we do not lose the feeling of the tree. Our affections cling to trees, one by one; and then the orchard becomes almost a sacred spot. A fruit tree in full load is one of the most marvelous objects in nature. We can not understand how the work



"BY THE WOODSHED OR THE PUMP, OR AGAINST THE BARN OR OVER THE GARDEN FENCE, THE APPLE TREE OR PEAR TREE CONNECTS THE RESIDENCE WITH THE WORLD OF LIFE AND SPACE THAT STRETCHES OUT TO WOODS AND FARMS".

is done, how such abundance is produced, and how such color and substance and flavor and faultless form are derived of the crude elements of soil and sunshine and air. It gives of itself out of all proportion to the care and affection that we bestow on it. It is a very sermon in liberality. It is a great thing that the making of orchards is spreading so rapidly, for it means not only commercial thrift but a growing appreciation of the tender and delicate and refreshing products of the earth. The race renews itself when it does these things.

L. H. BAILEY.

To avert treelessness; to improve the climatic conditions; for the sanitation and embellishments of home environments; for the love of the beautiful and useful combined in the music and majesty of a tree as fancy and truth unite in an epic poem, Arbor Day was created. It has grown with the vigor and beneficence of a grand truth, or a great tree.

J. STERLING MORTON.

THE TREE.

The Tree's early leaf-buds were bursting their brown:
"Shall I take them away?" said the Frost, sweeping down.

"No, leave them alone

Till the blossoms have grown,"

Prayed the Tree, while he trembled from rootlet to crown.

The Tree bore his blossoms, and all the birds sung:

"Shall I take them away?" said the Wind, as he swung.

"No, leave them alone

Till the berries have grown,"

Said the Tree, while his leaflets quivering hung.

The Tree bore his fruit in the midsummer glow:

Said the girl, "May I gather thy berries now?"

"Yes, all thou canst see;

Take them; all are for thee,"

Said the Tree, while he bent down his laden boughs low.

Bjornstjerne Bjornson

From Nature in Verse.

I love sunshine, the blue sky, trees, flowers, mountains, green meadows, sunny brooks, the ocean when its waves softly ripple along the sandy beach, or when pounding the rocky cliffs with its thunder and roar, the birds of the field, waterfalls, the rainbow, the dawn, the noonday, and the evening sunset—but children above them all. Trees, plants, flowers, they are always educators in the right direction,

they always make us happier and better, and if well grown they speak of loving care and respond to it as far as it is in their power; but in all this world there is nothing so appreciative as children, these sensitive, quivering creatures of sunshine, smiles, showers, and tears.

LUTHER BURBANK.

BIRD STUDY.

A large number of common birds of West Virginia are described in this manual. The teacher will find this material valuable not only for Arbor Day exercises, but also for regular class work in language and nature study. If the children are taught to recognize a few birds each year, the characteristics of most of them will be learned before the child completes his school course.

I. *Purpose.* The purpose of bird study in the lower grades is to establish a loving sympathy for birds,—a sympathy which shall lead children to observe birds and make friends with them.

II. *Analysis of Subject Matter.*

1. Recognition
2. Arrival
3. Home
4. Eggs
5. Young bird—(a) how fed, (b) clothed, (c) flight, (d) education.
6. Bird Language
7. Food
8. Migration—(a) when, (b) where, (c) why, (d) do all go? (e) which go first? (f) how they travel, (g) rate, (h) winter home.
9. Affection
10. Intelligence
11. Body—(a) temperature, (b) covering, (c) how adapted to flight, (d) head, (d) feet, (f) wings and tail.
13. How to attract birds.

III. *Method of Presentation.* Bird study demands enthusiasm on the part of the teacher if she expects the children to catch the real spirit. The above analysis and this method of presentation is not intended as a scientific study of birds. As stated in the purpose, it is to arouse interest and sympathy. Talking and reading about birds will not accomplish this end. The child must be given something to do to arouse his interest, and sympathy will develop later. As an introduction ask the children to observe certain things that birds do. Do they hop or walk? Are the same kinds of birds found near buildings that are found in the pasture and woods?

Which are the tamest? Why? Are all birds of the same color? What are some of the most beautiful birds? How do birds eat? What do they eat? When do birds sing the most? Where do they go at night? Ask the children to repeat the interesting things that they have seen birds do.

In teaching children to recognize birds, a field trip is the most effective method. This should be preceded by a short talk in which the teacher points out certain marked characteristics of the birds which they are most likely to observe on the trip. If they are likely to see several different kinds of birds, it is better to select not more than four to study. After these four have been located, devote the rest of the trip to finding as many of these kinds as possible. Colored pictures will often serve as an introduction and be of assistance in identifying birds. These should be placed in the school room where the children can see them. As new birds are identified other pictures should be brought out. After several birds have been recognized, a daily bird calendar should be kept. The children should report each morning the birds they have seen since the preceding morning. To avoid mistakes in identification, different children should be called upon to describe the birds they have seen. Birds arrive early in the spring before the snow has entirely gone. A spirit of expectancy should be developed at the time. Who will see the robin first? Note the date. What will it find to eat at this season of the year? Perhaps we can assist it by placing bread crumbs near the school building or near our homes. Does it seem to be happy on its return? When does it call the loudest? Why? The arrival of the other birds should be noted in the same way.

The home is soon started. If the season is cold, building goes on slowly. Do both male and female assist in the building process? Do all birds select the same kind of places for their homes? Describe the locality. If on a tree, what kind of tree? Was it on a branch, in a fork or hanging down from a twig? About how high from the ground? If on a building, what part? The shape of the nest. Did it have any protection? What? Out of what materials is the nest made? How held together? There is a danger in studying birds' nests in the spring that children desire to know too much about them, then we often disturb the birds. A more careful study of the nest can be made in the fall and winter.

After the home is made the mother bird lays several little eggs. Different birds lay different numbers. The eggs are not all the same size. For many days the mother sits upon the eggs and keeps them warm, that the little ones may grow in the eggs. When they are as large as the shell will hold, they come out tiny birds, which demand as much care as a small baby. What does the male bird do while the mother bird is keeping the eggs warm? Suppose another bird should come near the nest, what would the male do?

The little birds as they come from the shell are clothed in soft down. They need very tender care for the first few days. The mother

bird scarcely leaves the nest for fear that they will get cold. Often-times the father bird can be seen bringing the food. Soon the soft, downy coat gives way to small feathers. The mother bird is able to leave them for a short time. How happy she seems to be as she flies from place to place in search of food. Like little children, young birds need considerable food. At first the mother is able to supply caterpillars, beetles and grubs, but soon the task becomes too great. The father bird helps. Each little robin needs as many as fifty earth-worms a day. Watch the old bird as she hops about over the lawn in search of food. As the old bird lights near the nest, several little heads are stretched up with their mouths wide open. Each little one is fed before the mother bird thinks of herself. Think of the time and patience that are required. Surely the parents are happy when the little ones are ready to leave the nest. The old ones fly about teaching the little ones how to fly. For several days the baby birds will not attempt flight. At first their efforts are not successful, and they fall to the ground. Here they are fed and given further instructions until they are at last able to care for themselves.

The topics given in the analysis, that are not taken up in the presentation, should be considered in the same way; the method is largely by story and suggestion.

MAKING BIRDS FEEL AT HOME.

By feeding and housing birds we may increase the pleasure we have in seeing our feathered friends about us. Their songs bring cheer; their devotion to their young ones teaches a lesson of parental love. It is said in the Good Book that not a sparrow falls without note being taken. How much care are we taking to make the little bird's life easier that he may render more efficient service to us?

Children should be encouraged to provide bird houses near the home and school. Birds soon become accustomed to new homes. At first they look upon man's efforts in their behalf with suspicion but gradually they lose any fear that they may have had and become more tame than they were in their old homes. Bluebirds and house wrens respond most quickly and will even nest in a box that is placed within a few feet from our windows. In making bird boxes no attempt should be made toward artistic design. Boxes that resemble the natural resting places appeal to birds most. Chickadees, screech owls, and a few others remain with us during the winter and enjoy a bird house as winter quarters. Small boxes can be easily made into suitable bird homes. Children should be encouraged to make these and place them about the school buildings and their homes. Sparrows frequently take possession of bird boxes

and drive the more desirable tenants away. This difficulty can be overcome by hanging the box on a vine that will permit the box to move to and fro. Sparrows will only rest in stationary places.

IF EVER I SEE.

If ever I see,
On bush or tree,
Young birds in their pretty nest,
I must not, in play,
Steal the birds away,
To grieve their mother's breast .

My mother, I know,
Would sorrow so,
Should I be stolen away ;
So I'll speak to the birds
In my softest words,
Nor hurt them in my play.

And when they can fly
In the bright, blue sky,
They'll warble a song to me ;
And then if I'm sad
It will make me glad,
To think they are happy and free.

—Lydia Maria Child.

I USED TO KILL BIRDS.

I used to kill birds in my boyhood,
Bluebirds and robins and wrens,
I hunted them up in the mountains,
I hunted them down in the glens ;
I never thought it was sinful—
I did it only for fun—
And I had rare sport in the forest
With the poor little birds and my gun.

But one beautiful day in the springtime
I spied a brown bird in a tree,
Merrily swinging and chirping,
As happy as bird could be ;
And, raising my gun in a twinkling,
I fired and my aim was too true ;
For a moment the little thing fluttered.
Then off to the bushes it flew.

I followed it quickly and softly,
And there to my sorrow I found,
Right close to its nest full of young ones
The little bird dead on the ground.
Poor birdies, for food they were calling;
But now they could never be fed,
For the kind mother-bird who had loved them
Was lying there bleeding and dead.

I picked up the bird in my anguish,
I stroked the wee motherly thing
That could never more feed its dear young ones,
Nor dart through the air on swift wing.
And I made a firm vow at that moment,
When my heart with such sorrow was stirred,
That never again in my lifetime
Would I shoot a poor innocent bird.

BOB WHITE.

There's a plump little chap in a speckled coat,
And he sits on the zigzag rails remote,
Where he whistles at breezy, bracing morn
When the buckwheat is ripe and stacked the corn:
"Bob White! Bob White! Bob White!"

Is he hailing some comrade as blithe as he?
Now I wonder where Robert White can be?
O'er the billows of gold and amber grain
There is no one in sight; but hark again!
"Bob White! Bob White! Bob White!"

Ah! I see why he calls; in the stubble there
Hide his plump little wife and babies fair!
So contented is he, and so proud of the same,
That he wants all the world to know his name:
"Bob White! Bob White! Bob White!"

THE BROKEN WING.

In front of my pew sits a maiden—
A little brown wing in her hat,
With its touches of tropical azure:
And the sheen of the sun upon that.

Through the bloom-colored pane shines a glory
By which the vast shadows are stirred,
But I pine for the spirit and splendor
That painted the wing of that bird.

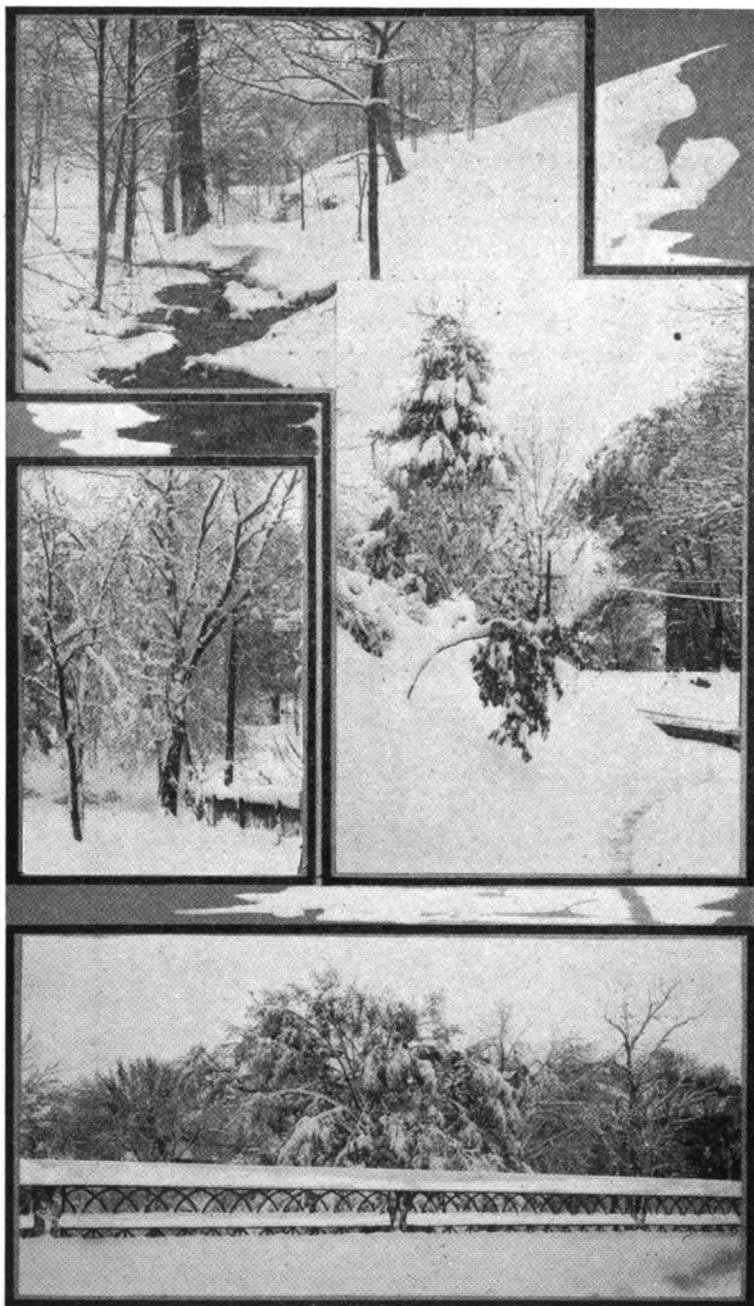
The organ rolls down its great anthem
With the soul of a song it is blent;
But for me, I am sick for the singing
Of one little song that is spent.

The voice of the curate is gentle;
"No sparrow shall fall to the ground;"
But the poor broken wing on the bonnet
Is mocking the merciful sound.

—Alabama Arbor Day Annual.



DOWNY AND HAIRY WOODPECKERS.



FORTY COMMON BIRDS OF WEST VIRGINIA.

BY EARLE A. BROOKS.

In West Virginia about two hundred and fifty-five species of birds have been found. Of these many are exceedingly rare, some are often seen by the casual observer, while others are very common. Some are of little importance, but others are of great economic value because of the food they eat and on account of their relationships to man and other forms of life. From this long list of species the writer has chosen forty that are common and of importance to farmers, fruit-growers, lumbermen, and to all who are in any way dependent upon the fruits, grains, vegetables, wood products or other field or forest products of our State. There may be other species of just as great value as those that are described, but the brief space to be given this subject does not permit a description of more than those that are here named.

In many cases the colors of the birds are not given. Usually the bird under consideration is so well known that a detailed description of the plumage is not necessary. But if there are unfamiliar species, the boys and girls who read this bulletin are asked to secure an inexpensive hand-book on birds and look up these questions for themselves. Indeed it is to be hoped that teachers throughout the State may help their pupils to a better knowledge of the useful birds and the books that describe them.

Recent numbers of the *National Geographic Magazine* have given lists of our common birds, accompanied by most beautiful colored illustrations and by brief accounts of size, economic value, food, etc. To Dr. Henry W. Henshaw, Chief of the Biological Survey at Washington, the author of these articles just mentioned, the writer is indebted for this plan of describing species. This method is brief, suggestive and to the point. Unnecessary details are omitted, and only such facts are given as may be of use in encouraging some boy or girl to take up the study of birds or to give to all who may read this bulletin a correct idea of the usefulness or harmfulness of certain birds that are seen about our farms and homes almost every day.

So little work has been done on the birds of West Virginia that there is great need of a book giving the entire list and a full description of every species known to occur in the State. Perhaps this can soon be done. In the meantime let every boy and girl, and every man and woman who loves the out-doors and the beautiful and valu-

able things of nature, be diligent in the study, and zealous in the protection, of our great natural wealth of bird life. Without the birds insects would work fatal havoc and much of the music of life would be hushed, but with these helpful friends, the foes of field and forest are held in check and the world is better and brighter.

BOBWHITE (*Colinus virginianus*.)



Length: 10 inches. The bobwhite is our best known game bird and is familiar to all because of its call and its usefulness.

Range: Found at all times of the year in the eastern parts of the United States. Very common in most parts of West Virginia, though not found in very great numbers in the higher mountain sections. At times very abundant in parts of our State.

Habits and Usefulness: This handsome little game bird is loved by every one who has ever made his home in the country or knows much of country life. The hunter, too, has very accurate

BOBWHITE.
knowledge of this bird and its haunts and hunts him in season and sometimes out of season. Perhaps no other game bird in all our country is known to more hunters than our little bobwhite. This bird is found out in the fields and sometimes in the edge of the woods. Usually an old grown-up brier field or a field covered over with Virginia beard-grass ("broom-sedge") is a favorite haunt. Frequently flocks of these birds are found in our pastures and meadows, in orchards, vineyards and gardens. Sometimes I have seen them in the streets or about the lawns in our larger towns. Fortunately for those who love this bird as a creature of usefulness and beauty, the bobwhite can be propagated in captivity, and many experiments are now being made along this line. Much more success is now being achieved in efforts to propagate this species than seemed possible a few years ago. This bird is useful in at least three ways. (1) Its

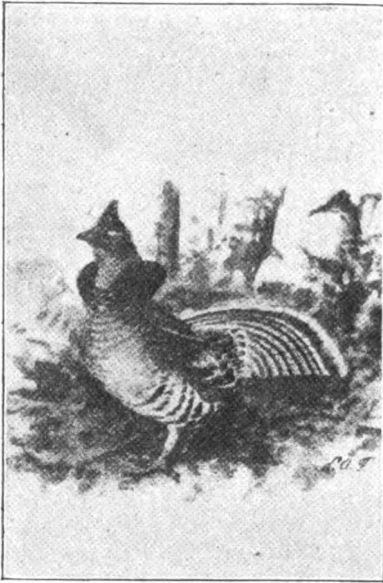
song is beautiful and the presence of this bird adds much to the pleasure of life in the country. (2) As a game bird the bobwhite has few if any superiors, and is excellent for food. (3) Many weed seeds and harmful insects are destroyed by the bobwhite. About one-half its food is made up of weed-seeds; one-fourth of grain; and the balance of wild fruits and insects. Recently we are beginning to realize that the bobwhite is one of our most useful species.

Song: The well known call, "bob-white, bob-white" is the only song of this bird, though there are several other call notes, notes of alarm, etc.

Nest: The nest of the bobwhite is found always on the ground, usually hidden in or under a bunch of grass and sometimes roofed over with dry grass blades. Occasionally the eggs are clearly visible as one passes by the nest, though usually they are hidden. The eggs are white and are from ten to eighteen in number.



NEST OF BOBWHITE.

RUFFED GROUSE (*Bonasa umbellus*).

RUFFED GROUSE.

ly common in nearly all of our hill region, though it is becoming quite rare in many sections. In some of our mountainous counties I have found large numbers of ruffed grouse, and many a time I have tracked them in the snow as I studied the winter birds in certain sections of the Alleghenies. - Along the Ohio river valley this bird is rare.

Habits and Usefulness: It has been said of the ruffed grouse that it is the "finest game bird of our northern woods." When one goes into the haunts of this wild species, hears its drumming call, discovers its nest, and watches it about the place which it has chosen for its home, he can not do otherwise than admire it. Though hunted for unnumbered years by certain wild animals and for many years by men, this bird still continues and, with slight protection, increases rapidly in numbers. The particular value of this bird lies in the fact that it is useful for food and gives much pleasure to the hunter. Yet the food which it eats helps to some degree in holding in check some of our insect pests. Speaking of the food of this bird a recent publication of the Biological Survey says, "Slightly more than 10 per cent of the food consists of insects, about one-half being beetles.

Length: About 17 inches. A fine game bird, almost the size of a small barn-yard fowl. Distinguished from other similar grouse found in some parts of our country by the black band near the tip of the tail. This is the species that is commonly called "pheasant" in West Virginia and other sections of the south and "partridge" farther north. The correct name is given above, and this is the name that should be used.

Range: Found throughout the year in the northern and central sections of the United States and in some parts of Canada. In West Virginia this species is fair-

The most important pests devoured are the potato beetle, clover-root weevil, the pale-striped flea-beetle, grape-vine leaf-beetle, May beetles, grasshoppers, cotton worms, army worms, cutworms, the red-humped apple worm, and sawfly larvae." Sometimes these grouse are quite tame, and one can approach them with very little difficulty. At one time, near the edge of the Cranberry Glades in Pocahontas County, I stood for a long time and watched one at very close range as he sat sunning himself on the end of a spruce log. Usually, however, this bird is seen as he flies up suddenly from the ground along some woodland path and with whirring wings flies deeper into the forest.

Song: This species has no song, but sits for hours on some chosen log and "drums." This sound is a familiar one to every country boy.

Nest: The nest is simply a little depression in the ground made at the base of a forest tree or by the side of a fallen tree-trunk. The eggs are pale buff, and are from eight to fourteen in number. About the first week in May the nests are made ready and soon the eggs are to be found. There is a certain delight that comes in the finding of such a nest as that of the ruffed grouse, which amply pays for the most arduous sort of search.

MOURNING DOVE (*Zenaidura macroura carolinensis*).

Length: About 12 inches. Not so large as the passenger pigeon once so common in this country. This is the only dove we have in West Virginia, and is a species well known to all: Sometimes called the "turtle dove".

Range: Found throughout the greater part of North America, and in our part of the country remains through the entire year. In sections of West Virginia where nearly all the land is cleared, especially where there is much grain grown, the mourning dove is quite common. Indeed there are localities where it is abundant. Along the Ohio valley this species is often seen in flocks of ten or more. In all the larger river valleys it is found in greater numbers than back among the hills. Far up in the mountains in the thickly forested areas these doves are rarely seen.

Habits and Usefulness: Those who travel along a country road or go through a field, where the grain has recently been cut, often see one, two or three birds fly up rather suddenly, with a marked whistling of wings, and in rapid flight go to some other part of the field. Usually they are found in such places as have been mentioned or in open woods where they delight to stay in the nesting season. In the

spring they are most frequently seen in pairs, but at other times they associate in little companies and sometimes in flocks of as many as seventy-five. Since this bird is common in nearly every part of our State and remains with us throughout the entire year, its food must be of great importance. This fact is evident when one studies the food-habits of the mourning dove. More than 99% of the food of this bird is vegetable matter and of this almost two-thirds consists of weed seeds. In every month of the year these birds are going over the ground gathering seeds of many kinds to satisfy their hunger. Thousands of seeds have been taken from a single stomach, and so great are the numbers of seeds destroyed by a single bird that one can scarcely estimate the good they do. A recent government report, after going over the economic status of this bird, says, "It should be protected in every possible way." Then who would give up the mourning dove, even if it did not do so much good? When the first warm days of spring come its song furnishes a most attractive part of the music of that glad season of the year. From an aesthetic standpoint the bird is of great value.

Song: A soft cooing note familiar to all.

Nest: Like all the doves and pigeons this bird is a very poor architect and builder. Only the most imperfect sort of a structure forms its nest. When one is going about an open woodland or along a country road in the spring, even as early as the first week in April, he may find a nest of a few coarse sticks on a log, a fence rail or the lower branches of a tree not more than ten feet from the ground. A pair of doves near by will help in determining the species to which the nest belongs. Usually the female will be found on the nest with two white eggs under her warm feathers.

TURKEY VULTURE (*Cathartes aura septentrionalis*).

Length: About 30 inches. A large bird of prey often called the "turkey buzzard." This is the only vulture found in our part of the United States, though one or two other species are found elsewhere in North America. The turkey vulture is one of our largest birds, and may be seen flying high overhead or feeding on its peculiarly offensive food.

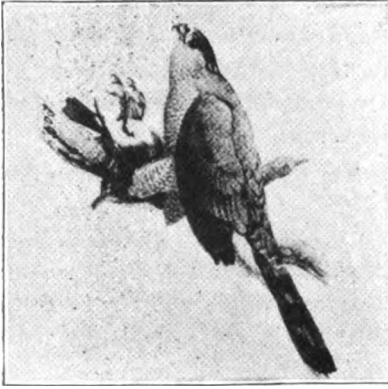
Range: Common throughout the United States and the southern parts of Canada. In most of its range it remains throughout the year. In the interior of West Virginia this species has strangely disappeared during the past fifteen years and is now exceedingly rare. Dur-

ing a residence of eight years in Lewis County I have seen this species but twice. In the Ohio valley this vulture is very rare, but in the eastern part of the State it is abundant. During a recent trip through Morgan, Hardy, Hampshire and Grant Counties these birds were seen by the thousands. One morning in August ninety-one of these large birds were seen sitting in two old dead trees standing out in a field. Everywhere they were flying about, and one could scarcely look in any direction without seeing or or more of these graceful creatures.

Habits and Usefulness: This great bird is most likely to be seen in one of three places—soaring lazily through the air, feasting upon the carcass of some dead animal, or sitting, sometimes with half-spread wings, on a tree or bare rock. Usually they prefer an old dead tree or a limbless stub as a perch. In regions where the heat and dampness hasten the processes of decay, this vulture and other scavengers are exceedingly useful in devouring decaying animals and other offensive matter. Though these birds are strong they never attack living animals. It is commonly believed that they are guided to their prey by the sense of smell, but it is evident that sight plays a large part in the location of food, and one bird follows others until great numbers have gathered together around their ill-smelling feast. In some cases they probably spread contagious disease, such as hog cholera, from one place to another, the germs being transported on beak and talons. However the extent of injury thus done is not known positively, and this possible harm is not sufficient to warrant the destruction of this otherwise useful species.

Notes: They have no song, of course, but only a low grunting note.

Nest: The nest is on the ground among rocks or in an old log or stump. The nesting sites that I have observed in West Virginia have all been among the rough rocks in the eastern part of the State. Last summer in the month of August I visited two nesting sites among the rocks on Great Cacapon Mountain. One was in a cave several feet under ground. The young had left the nest, but were in the trees near by. After divesting myself of all superfluous clothing I crawled down among the rocks and found the place where the eggs had been laid and the young hatched. When the young first appear their skin is almost naked, but later the white down appears. I found particles of this down for several rods in every direction round about the nests. One to three dull white, blotched eggs are laid, usually in April or May.

COOPER'S HAWK (*Accipiter cooperi*).

Length: About 16 inches. A hawk of medium size, swift flight, graceful form, and slaty gray color.

Range: Breeds in nearly all parts of the United States and southern Canada. In West Virginia this hawk is fairly common in the higher hill and mountainous regions, being seen in considerable numbers in all the Allegheny ranges. In the spring almost all of our tracts of woodland when they are of considerable

COOPER'S HAWK.

size, have their pair of nesting hawks, and many times it is a pair of Cooper's hawks. Almost as common as this species is one of near kin, the sharp-shinned hawk.

Habits and Usefulness: Whenever a young chicken is missing or when one sees a swift-winged hawk chasing a small bird through the air, the probability is that the guilty bird is a Cooper's hawk. Pre-eminently this species is a destroyer of chickens and of small birds. Of all our hawks this species is least worthy of protection, and is one of a very few species of birds that is exempt from legal protection in West Virginia. Perhaps, however, were we to know the exact relationship of this species to all other forms of life, we might conclude that even this bird should not be killed. Of course all intelligent persons will know that because the Cooper's, sharp-shinned, marsh, red-tailed and some of the other hawks do some harm by destroying poultry, song birds and game birds, all should not be killed without discrimination. Some of our hawks are very useful, are protected by the law of the State and should not be killed.

Notes: The notes of this species are few and rarely heard.

Nest: About the middle of the spring months the Cooper's hawk begins to build its nest high up in the trees. The nest is composed of sticks and within are to be found from three to six bluish white eggs. The eggs are sometimes slightly spotted with brown.

RED-TAILED HAWK (*Buteo borealis*).

Length: One of our largest hawks; about 23 inches from end of bill to tip of tail. This is the large bird that is so often called "hen-hawk." When seen flying overhead the male can often be identified by its rather bright russet-red tail. At times I have been able to distinguish the red tail of this species at a great distance. The female has a banded tail, and, as usual among birds of prey, is larger than the male.

Range: Found throughout the greater part of eastern North America. In this part of its range it is resident, and one may go out in the fields almost any day, at any time of the year, and see a pair of these great birds circling about high in the air. Usually they fly in pairs. Found also in the densely wooded areas. In every West Virginia mountain region that I have visited I have found this species in considerable numbers. When on a trip to the Cranberry Glades in June, 1914, I found it quite common, as it flew about over the great glades evidently searching for the little mammals that are found in such great abundance among the tussocks of cranberries, sphagnum moss, and marsh grasses.

Habits and Usefulness: Together with the Cooper's hawk and the sharp-shinned hawk we have a trio of birds that may be classed as our most harmful species. Frequently one of these great birds forms the habit of killing chickens, even as certain tigers in India have the habit of killing men. Whenever a hawk of any species is found destroying poultry it is right, from an economic standpoint, to kill it. Yet this does not prove that all hawks should be killed, for all do not have the bad habit of killing chickens or other poultry. In the examination of 562 stomachs of this species, the experts at Washington found that 54 contained poultry or game birds; 51, other birds; 278, mice; while 131 had been feeding on other mammals. This statement reveals how large a percentage of these birds feed upon our small mammals, many of which are harmful.

Notes: Often, when a small boy, I have sat watching the aerial evolutions of this bird by the hour and have heard sometimes from far away and sometimes from near by, the peculiar shrieking, whistling scream of the red-tail. It is a sound that is suggestive of height, grandeur and the infinite distances of the blue sky.

Nest: Very high up in our tallest trees the red-tail prefers to place his rude nest. It is made of sticks and held in place by the

forks of the tree in which it is built. A number of times I have seen the young birds only a short time from the nest and have evidences that the bird nests in considerable numbers in our State. From two to four dull white, slightly marked eggs are laid in March or April.

BARRED OWL (*Strix varia*).

Length: About 20 inches. A bird of strength and heavy proportions. Often this species is called "mountain owl" because of its great abundance in certain parts of our mountains.

Range: Eastern parts of North America. In the west its place is filled by nearly related sub-species. Throughout our section of the country this owl is very common, and judging from its abundance in certain sections, one must conclude that this is an ideal home for this species. I have seen many barred owls in various parts of the Alleghenies as well as in the hill region of our State. Wherever there are large tracts of heavily wooded forest, there the barred owl may be found. My locality records for this species in West Virginia are as follows:--French Creek, Weston, Fairfax, Cranberry Glades, Hanging Rock, North Mountain, Turkey Bone, Great Cacapon and Mannington. Of course it is found in practically every locality in the State, though records have not been made.

Habits and usefulness: On soft wings this large owl may occasionally be seen flying about in deep woods or sitting with sleepy-looking eyes in the concealing branches of a tree. On dark, gloomy days it is not unusual to see this bird flying about, but, of course, it is most active at night. The food of the barred owl consists, for the most part, of mice and other small mammals, insects, small birds and a few aquatic forms of animal life. I believe it is one of our useful birds.

Notes: Many of our nocturnal birds are best known by their notes. In looking over certain accounts of this species I find that very much has been written concerning the various notes of this owl. The Indians and pioneer scouts often used an imitation of the *whooo, whooo, who-who, wa-who-ah* of the barred owl as a secret call, and gave various signals by means of variations of this call. Occasionally the wild, weird hooting of these birds may be heard in daylight. From my recent notes I copy the following, "Cranberry Glades, June 4th, 1914. One heard in dense woods below glades giving its sonorous call about 10 o'clock in the morning." While camping on the mar-

gin of the same glades one night some years ago I noted three distinct calls given by this bird. One was most impressive, and to a timid person it might be almost terrorizing. All night long a complaining, wheezy note, sounding like the fierce and difficult breathing of a giant was heard in the trees overhead. Then, again, far off in the woods, yells like those of a wild man in the fear of some awful mania were heard. Occasionally the ordinary *wa-whooo-ah* was given by some owl across on Black Mountain or from a nearby perch on a great spruce or birch tree.

Nest: The nest is usually built in a hollow tree or in the nest of some large bird. Not often found. Two to four white eggs.

SCREECH OWL (*Otus asio*).

Length: A small owl, not quite 10 inches long. This bird is found in two distinct color phases, the red and the gray. Why this variation in color, no one knows. With the exception of the saw-whet owl this is the smallest member of the family found in our State.

Range: Found throughout the central part of North America from central Mexico to the southern parts of Canada. In West Virginia the familiar screech owl is of general distribution, and wherever bird students have gone they have found this little night bird.

Habits and Usefulness: In his excellent "Hand-Book of Birds," Mr. Frank M. Chapman says of this species, "The Screech Owl frequently makes it home near our dwellings, and sometimes selects a convenient nook in them in which to lay its eggs. But its favorite retreat is an old apple orchard, where the hollow limbs offer it a secure refuge from the mob of small birds that are ever ready to attack it. A search in the trees of an orchard of this kind rarely fails to result in the discovery of one or more of these feathered inhabitants who may have resided there for years. They attempt to escape capture by a show of resistance and a castanet-like cracking of the bill, but when brought from their hiding-place sit quietly, dazzled for a moment by the sudden light. They then elongate themselves and almost close their eyes, thus rendering themselves as inconspicuous as possible. How differently they appear when the western sky fades and their day begins! Is any bird more thoroughly awake than a hungry screech owl? With ear-tufts erected, and his great, round eyes opened to the utmost, he is a picture of alertness. When night comes, one may hear the screech-owl's tremulous, wailing whistle. It is a

weird, melancholy call, welcomed only by those who love Nature's voice whatever be the medium through which it speaks."

Notes: In the quotation given above the "screech" of this little owl is well described. There is, however, another note of this owl that is not so often heard or described. It is a low fluttering note, sounding like a note easily made by the vocalized trembling of the end of the tongue. This call is often attributed to rabbits by the hunters of our State and by careless observers. It is usually heard on warm moonlight nights when the screech owl is out in search of his prey.

Nest: Generally in a hollow limb or hollow tree trunk. The eggs are white and from four to six in number.

BLACK-BILLED CUCKOO (*Coccyzus erythrophthalmus*).

Length: Nearly 12 inches. A long slender bird almost serpentine in its appearance and actions. We have two species of cuckoos in West Virginia.

Range: Found in the Transition Life Zone from southern Canada to northern Georgia in the summer, and spends the winters in South America. I have found this species in many sections of West Virginia, though it is not so common in the lower river valleys nor in the high mountains. It is pre-eminently a bird of the hills, where it finds its favorite resorts in orchards and in open woodlands. After the first week in May, when this bird comes to our section on its northward migration, the black-billed cuckoo may be heard, though not so easily seen, in almost any apple orchard in interior West Virginia.

Habits and Usefulness: It is a well-known fact that this bird feeds upon the tent caterpillars that build their great white tents on the branches of apple and cherry trees early in the spring. On several occasions I have seen these neat brown birds tearing away the web of this caterpillar that they might find and devour the larvae. At times great numbers of these caterpillars are destroyed by these useful birds. Many species of the hairy and spiny larvae of certain moths are eaten by these cuckoos, and several hundred small hairy caterpillars have been found in the stomach of a single bird. Professor Beal found 2771 caterpillars in the stomachs of 121 black-billed cuckoos. In habits these birds are retiring, though by careful search they may be found moving about slowly among the green leaves.

Song: A rather strange interpretation of sounds makes the bird under consideration say "Cuckoo, cuckoo." The song, if such it may

be called, is a series of jerky, guttural notes, unlike the notes of any other bird excepting those of the yellow-billed cuckoo, its congener. Often this bird is called "rain-crow" because its call is supposed to be prophetic of approaching rain. It is perhaps true that the call is given most frequently on damp, warm mornings when the barometer indicates rain and when the clouds are gathering for a storm.

Nest: The frailest and shallowest sort of an affair serves the cuckoo as a place for her blue eggs. The nest is made of small sticks and is placed a few feet up in a small tree. The young are peculiar-looking creatures, having a reddish black skin with here and there a little tuft of white down. The nests are usually made early in May, soon after the birds arrive from the South. I have found them nesting in a number of places in West Virginia.

BELTED KINGFISHER (*Ceryle alcyon*).

Length: A little more than one foot in length, with large head and bill. The only kingfisher found in the eastern part of the United States. Easily identified because of its clear white, blue and russet colors.

Range: Found through the greater part of North America and parts of South America. Breeds in all the eastern part of the United States and as far north as northwestern Alaska. In every county in West Virginia that I have visited I have found the kingfisher, and it is fairly common in almost every part of our State. Along some of our mountain streams it is very abundant, and, like a good fisherman, prefers the mountain trout. Last summer at Scherr, Grant county, I found the belted kingfisher more common than I have observed it at any other point. Every few minutes one might be seen flying along Patterson Creek or splashing down in the water after a fish. Not infrequently this species is observed in winter time. For four years a kingfisher has been seen almost every winter day along the West Fork River in front of my home. Whether or not it is the same bird I can not say, though his familiarity with certain perches almost inclines me to think so at times.

Habits and Usefulness: Through the efforts of certain men the belted kingfisher is exempt from legal protection in West Virginia. Though it is true that some fish are destroyed by this beautiful bird, I feel that it should be protected for its attractive appearance, its association with the wild haunts of the speckled trout and for its interesting ways, if for nothing else. It is said that many young fish

are destroyed by this bird at the fish hatcheries, and that the injury done in that way is hard to combat. One sees the kingfisher most often as he flies along a clear stream or perches on a nearby limb that overhangs the water. After watching carefully for some minutes suddenly the kingfisher dives into the water with a great splash and brings up a small fish not usually more than two or three inches long. These are swallowed head first, and soon the kingfisher is again on the lookout for his finny prey.

Notes: The only note that I have heard is the well-known rattle.

Nest: One sometimes sees a burrow leading far back into a high bank along some stream. Such is the nesting site of the belted kingfisher. Sometimes the nest is six feet or more from the entrance. At the end of this long excavation is a little heap of fish bones on which the five to eight white eggs are placed. In several places in the State I have found the kingfisher nesting. Especially well do I remember a nest in a high bank along the Elk River in Clay county.

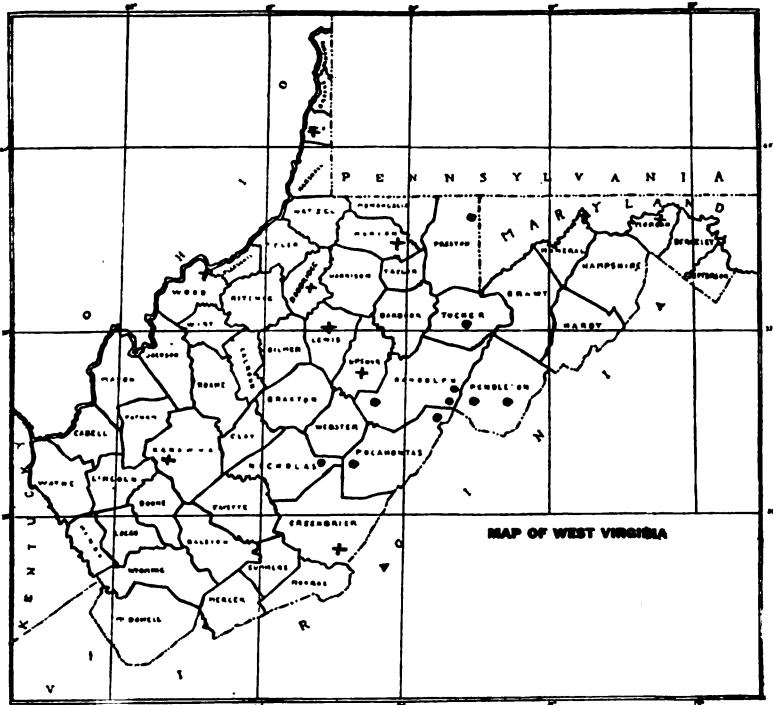
YELLOW-BELLIED SAPSUCKER (*Sphyrapicus varius*).

Length: About eight inches.

Range: Eastern North America. Breeds in the northern parts of the United States and along the mountain tops as far south as North Carolina. In West Virginia this woodpecker is found throughout the State in migration season, and occasionally in the winter, but only in the highest mountain ranges in nesting time. Extensive observations of this species have been made by the writer in many counties in this State. It has been found breeding in Tucker, Pendleton, Randolph, Pocahontas, Nicholas and Webster counties. I have found this bird in winter in Kanawha, Upshur and Lewis counties, and in migration wherever I have been at the time the birds pass north or south on their semi-annual flights. The accompanying map will show distribution in West Virginia.

Habits and Usefulness: The yellow-bellied sapsucker has a curious habit of puncturing the bark of trees and of feeding on the cambium, or inner bark, and drinking the flowing sap. Sometimes when the sap ferments, great numbers of insects are attracted and the sapsucker then varies his diet by feeding upon them. In the early spring a close observer may find a dark colored woodpecker, with yellowish tinge on his breast and deep blood red about his head clinging to the trunk of a birch tree drinking from the sweet water that flows from a succession of little round fountains which he has drilled through

the outer bark. Most of the series of regularly drilled holes often observed on apple and various forest trees are made by this species. In the Spruce Mountains I once found a nest of this species in an old dead tree which stood well out in a burnt-over tract. The old birds flew back and forth to a forest nearby, perhaps two hundred yards away, and I soon found that they were making regular visits to a large sugar maple tree that grew in the edge of the woods. On fur-



MAP OF WEST VIRGINIA.

SHOWING SUMMER AND WINTER DISTRIBUTION OF YELLOW-BELLIED
SAP-SUCKER. THE BLACK DOTS INDICATE PLACES WHERE BIRD IS
FOUND IN SUMMER; THE CROSS MARKS INDICATE WINTER OR MIGRATION
RECORDS.

ther investigation I found that the old sapsuckers had made a great number of punctures within a small area on the side of the tree, about thirty feet up, and from these punctures the sap was flowing slightly and running far down the side of the tree. Great numbers of insects were flying about and the old birds came frequently and seemed to be gathering food for their young ones there among the

great multitude of insects. The economic status of this bird is in question, because its habit of puncturing forest trees is a harmful one. At least 250 kinds of trees are known to have been injured by this bird, and in a single year many thousands of dollars worth of lumber is destroyed. However the bird is also beneficial in destroying ants and other forms of insect life.

Notes: The note of this species which is most commonly heard is a soft mewing call given at long intervals as the bird moves slowly about the trunk of a tree. Other notes are rarely heard.

Nest: In a hole in a tree about forty feet from the ground. Five to seven white eggs. I have found but one nest in West Virginia, but have evidence that they breed quite commonly in our mountains.

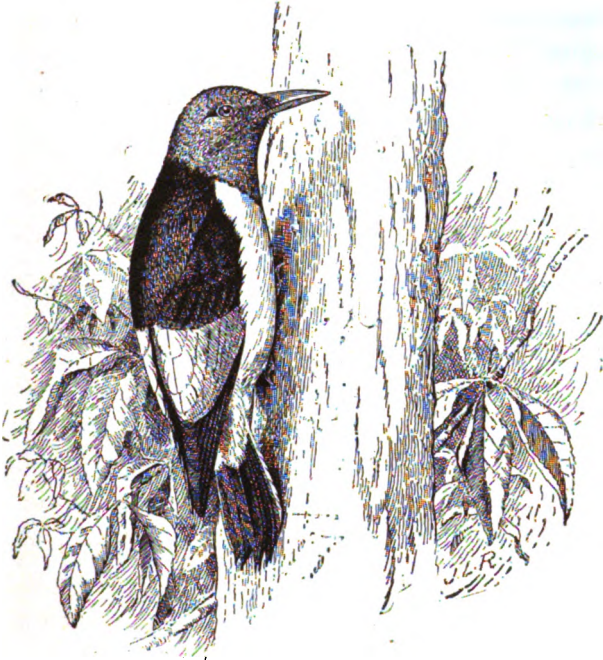
RED-HEADED WOODPECKER (*Melanerpes erythrocephalus*).

Length: A little less than 10 inches. A common woodpecker easily distinguished from the other species by its very bright colors and handsome appearance. The head of the adult birds is entirely red and the rest of the plumage is in large portions of black and white.

Range: Found throughout most of the eastern two-thirds of the United States. In the summer it is common in most sections of West Virginia, though not found in great numbers in the mountainous regions. In two or three sections I have found this species spending the winter in our State in some secluded and protected location. Great numbers of these birds spent the winter in a dense woodland not far from Weston a few years ago. Found in largest numbers about our farm lands where there are many dead trees standing and where corn is grown.

Habits and Usefulness: The variation in the feeding habits, as well as other habits, of the woodpeckers is very marked. The red-headed woodpecker is, in its methods of getting food, more like a flycatcher. Frequently one may see one of these birds sitting in an old dead tree or on the top of a stub making oft-repeated flights out into the air and catching insects with all the skill of a flycatcher. I have seen them at this work for more than an hour at a time, when the air is full of flying creatures in the midst of summer. The chief injury done by the woodpecker is in feeding on small fruits, eating corn "in the milk," destroying the eggs of wild birds, and in making its nesting holes in telegraph and telephone poles. Over against this injury one may write a word of praise, for this species destroys great numbers of insects such as the 17-year cicada, clover beetle, corn

weevil and cherry scale. In winter these birds eat great quantities of beechnuts. Though the injury done to corn is sometimes very great, since the birds strip open the husks and get at the juicy kernels, on the whole I believe this to be a beneficial species and entitled to protection.



RED-HEADED WOODPECKER.

Notes: As one goes among the trees when nuts are ripening or around the edge of a cornfield when the roasting ears are just in their prime or among the dead trees where these birds have their nests, he often hears a noisy company of birds flying about and making a great variety of cackling, tree-toad-like notes. These commonly come from the red-headed woodpecker. A little watching will reveal the identity of these raucous musicians and will reward the observer by the sight of a bird than which there are few of greater beauty.

Nest: The nest is built in woodpecker fashion in a hole well up in a dead tree. In recent years the nesting holes are often drilled into the well-seasoned wood of telegraph and telephone poles. At Cameron I have found several nests in such locations. Eggs four to six, pure white.

NORTHERN FLICKER (*Colaptes auratus luteus*).

Length: 12 inches. One of our most common birds and easily distinguished from all other species.

Range: Its habitat includes most of the eastern part of the United States and the greater part of Canada. The American Ornithologists' Union's Check-List says, "Breeds from tree limit of northwestern Alaska, northwestern Mackenzie, central Keewatin, southern Ungava, and Newfoundland south, east of the Rocky Mountains, to northern edge of Austroriparian Zone; occasionally on Pacific slope from California northward; accidental in Greenland; migratory through most of Canada, but more or less regularly resident within the United States, except the extreme northern part; south in winter to the Gulf Coast and southern Texas." In West Virginia this species is everywhere abundant in summer, and occasional in the winter. Great flights of these birds have been noted in certain sections. At one time, in the mountains beyond Richwood, I noted twenty-five in one flock. At times I have seen great numbers of these "golden-winged woodpeckers" about the black gum trees in the fall migration season.

Habits and Usefulness: The flicker, often called "yellow hammer" or "high hole," is the most terrestrial of all our woodpeckers. As one goes about the fields or along a country road a flicker often flies suddenly from the ground with a startling flutter of its bright yellow wings. The places it prefers are open woods, old orchards and the large burnt-over tracts so common in West Virginia. Though the flicker eats some cultivated fruit, its principal fruit diet consists of berries of the black gum and wild black cherry. Its insect diet consists largely of ants and other terrestrial species. As many as 5,000 ants have been found in one stomach. Very often this species may be seen feeding upon the winged termites as they emerge from the decaying wood on warm days late in the spring. No formidable charge can be laid against the flicker on account of any of his food habits. The species is very beneficial.

Notes: The spring call of the flicker is so musical that it deserves to be called a song. On the first warm days of early April the far-sounding notes of this species may be heard, and they are often considered a sure sign of the coming of spring. There are several notes and calls by which the flicker expresses his changing emotions. In the mating season he uses the drumming call, just as others of his

kind do, taking his place on a hard and resonant limb and hammering out a drum call that can be heard far across the hills. Usually silent about the nest. The strange courtship contortions of this bird are accompanied by the "flicker, flicker, flicker" note that gives the bird its name.

Nest: In a large hole in dry tree or telephone pole. Eggs five to nine, porcelain white.

WHIP-POOR-WILL (*Antrostomus vociferus*).

Length: Almost 10 inches from tip of bill to end of tail. Every boy and girl should learn to distinguish the whip-poor-will from the nighthawk, or "bullbat," which flies about in such large flocks during August and September. The nighthawk has white spots on its wings and a slightly forked tail, while the whip-poor-will has a rounded tail and is never seen flying about overhead as the other nearly related species is.

Range: In the summer this species is found in the eastern part of North America from the southern part of Canada to the northern part of Georgia, Louisiana and Mississippi; it winters from the lowlands of Georgia to the Central American states. In West Virginia it is found in greatest abundance in the central hill region, though it occurs occasionally along the Ohio river and even in the higher mountains. I have found this species at Cheat Bridge, Cranberry Glades, Scherr and at a few other points high up in the mountainous parts of the State.

Habits and Usefulness: I have found no better description of this bird and its food than that given by Dr. Henshaw in a recent copy of the National Geographic Magazine (Vol. XXV, No. 5, page 512), "This bird of the night, whose day begins with the going down of the sun when the nighthawk's ends, is common throughout the east in open woodlands, on the edges of which it likes to hunt. It dozes away the hours of daylight squatting on the ground among the leaves where its marvelous protective coloration affords it safety. No sooner have the shadows lengthened, however, than it becomes active and its characteristic note resounds through the forest glades. So plaintive is its cry and so mysterious its comings and goings, that in the mind of many its notes are associated with misfortune, as a death in the house near which it persistently calls. The whip-poor-will may be accounted one of our most efficient insect destroyers, as its immensely capacious mouth beset with bristles—a regular insect trap—

would suggest. Among its prey it includes May beetles and moths. These two form the principal articles of food and as they are parents respectively of the white grub worm and an innumerable host of caterpillars their destruction is of marked benefit to agriculture."

Song: The only song of this bird is its well known plaintive call that sounds from hill to hill all night long in so many places in our State. I have been out among the hills at night, sleeping out in the open with a crowd of boys perhaps, when, just before daybreak, quite a number of these nocturnal birds could be heard singing at the same time. Every country boy should try to get near enough to a whip-poor-will some night when it is singing to hear its faint cluck-note given between each utterance of its song.

Nest: The Whip-poor-will really has no nest. On some smooth place among the leaves in dry, open woods this bird lays her two blotched or mottled eggs and there hatches her præcocial young.

CHIMNEY SWIFT (*Chaetura pelagica*).

Length, about $5\frac{1}{2}$ inches. So common is the chimney swift, or "chimney swallow," as it is often called, that no general description need be given. All any one needs to do in order to know this little aerial bird is to look up into the sky at any time from the last week in April to the middle of September and there these small bow-shaped, chattering, tireless birds may be seen.

Range: Widely distributed in the summer from the great plains eastward throughout the United States and southern Canada as far north as Newfoundland. The winter home of this common species is not certainly known. It may be said of its distribution in West Virginia that it is found everywhere during the summer months. I have never studied birds in any portion of our State where I did not find this species in considerable numbers. In some places it is abundant, and there are times in the fall when immense flocks of these little birds may be seen as they gather for their fall migration flights. As early as August the little family groups from different sections begin to assemble, and by the last of the month they may be counted by the hundreds or by the thousands as they prepare to journey toward their winter home. High up in the mountains as elsewhere in West Virginia the swifts are very common.

Habits and Usefulness; Practically all the daylight hours are spent by the chimney swifts flying about in search of insect food or circling

in almost endless flights through the air. The swift never alights on the ground nor in trees but flies continuously from morning till night, resting only as it builds its nest on the sooty interior wall of an old chimney or as it roosts in the same sort of a location or in a hollow tree. Since so much of the time is spent in the air of course its food is made up of flying insects. No insect that flies, unless it be a very large species, is safe when the swifts are abroad. We may place this little bird on our list of very useful species.

Notes: The common chattering note that one hears so often is the only one heard from these birds excepting a little squeaking chatter sometimes heard at night in the chimneys where they roost.

Nest: The nesting habits of this species are quite unique and should be studied with much interest by our boys and girls. The material is gathered as the birds fly through the air, and never from the ground. With swift wings these little birds fly through the top of a tree that has a number of small dead twigs and with their strong feet they break off the tiny branches and carry them away to some chosen chimney where they glue them together with a mucilaginous saliva that they secrete from their own mouths. With these twigs glued securely together they form a little pocket-shaped nest on the inside of a chimney. Last summer at the foot of Kennison Mountain I found them nesting about an old lumber camp and one or two nests were fastened to the attic wall of an old blacksmith shop. Four to six white eggs.

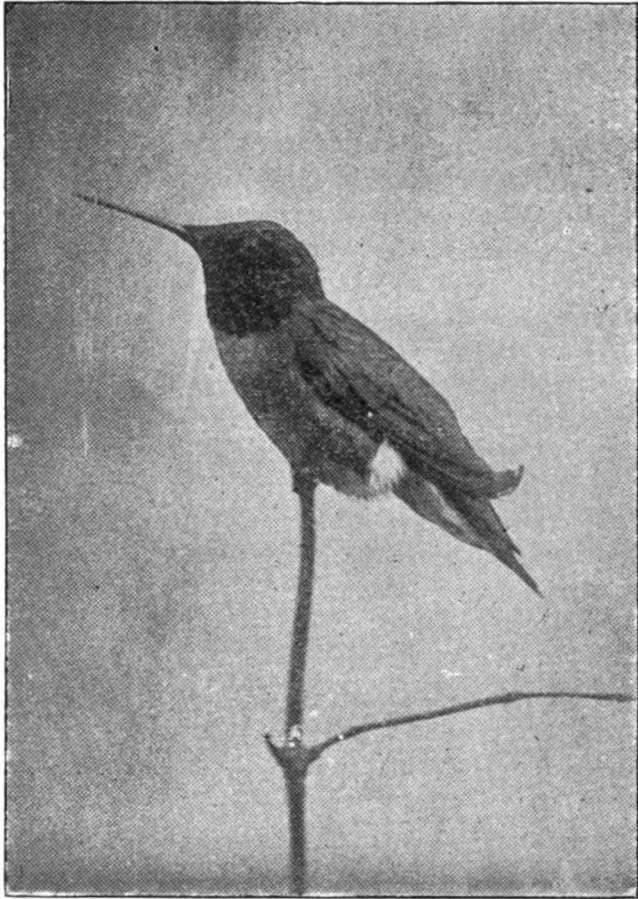
RUBY-THROATED HUMMINGBIRD (*Archilochus colubris*).

Length: Less than four inches; the smallest of all our birds. The only hummingbird found in the eastern part of the United States, though several species of this family are found in the western and southwestern parts of our country.

Range: Eastern North America. Its summer home extends from Saskatchewan to central Texas and from Quebec to the Gulf Coast; in winter it migrates as far south as Panama. Though not much larger than a bee it extends its migration flight over long distances and makes its way to and from its southern home unerringly. In West Virginia the ruby-throated hummingbird is common everywhere. From my notes I copy the following, "Top of Cranberry Mountain, August 5th, 1909. A very great number of hummingbirds feeding about the red blossoms of Oswego tea. Far more than I have ever

seen at any other place." In other sections of the State I have found them to be quite abundant and everywhere fairly common.

Habits and Usefulness: In Central and South America there are vast numbers of hummingbirds—about 500 species. No hummingbirds are found in the Old World; they are peculiarly American. But



RUBY-THROATED HUMMINGBIRD.

of all these hundreds of species, only one have we in this part of the United States. But though *sui generis*, this little bird is well known and may be observed on almost any summer day as it feeds among the flowers and gathers its favorite food of nectar and small insects. In disposition the hummingbird is pugnacious, active, domineering.

It frequently attacks species much larger than itself and usually vanquishes them in the contest. The bird feeds among the flowers almost constantly and thus destroys great numbers of the smaller species of insects. It is believed to be a very beneficial species. This much is certain, it does no harm and its beauty should entitle it to protection.

Notes: As if to balance its account with other birds, Nature seems to have deprived the hummingbird of song because of the prodigality of color with which its plumage is adorned. The ruby and green colors shine forth from this little bird, glistening with metallic effulgence, but he has no song. Only a little harsh squeak constitutes his vocabulary and he uses it often, not to express his love, but to show his bad temper as he flies after another of his kind that has dared to come among his favorite flowers or as he dashes furiously at some larger bird to drive him away.

Nest: Sometimes one finds a nest on the horizontal limb of an orchard or woodland tree. However, they are not easy to discover. In all my searching for birds' nests I have found only one nest of the ruby-throat. The nest is a little knot shaped structure saddled across a limb and protectingly concealed by lichens and plant down. Eggs two, white.



A GOOD NEIGHBOR WHO WORKS ALL NIGHT FOR THE BENEFIT OF
MANKIND.

CRESTED FLYCATCHER (*Myiarchus crinitus*).

CRESTED FLYCATCHER.

country for the winter. Not found in the higher mountains nor even in the upper edge of the Transition Life Zone. Found in greatest abundance in the deciduous woodlands in the central part of the State.

Habits and Usefulness: I have not found a better description of this flycatcher than that given by Mr. Brewster in his notes on the birds of Ritchie county. He says, "Abundant, affecting alike the open oak woods and the heavy undergrowth of the ravines. Their ordinary note was a single whistle, extremely loud, and possessed of something of a weird character, making it peculiarly noticeable in the gloomy depths of the forests where it is usually heard. In addition to this they utter a rather loud and harsh rattle. Their habitual attitude is an erect one, and they have a peculiar habit of sailing from tree to tree with spread wings and tail somewhat in the manner of *Perisoreus Canadensis*." Usually this bird is seen sitting in the top of some tall tree in the edge of the woods or flying from one exposed place to another as it searches for its insect prey. This is a very useful species. Has been found feeding upon the moths of the grape-vine root-borer. Often comes and gathers its food about vineyards, and perhaps eats great numbers of this harmful species.

Length: Slightly more than nine inches. A common bird, brown and gray in color, conspicuous in its manner, though not commonly known.

Range: Common in the eastern parts of the United States and southern Canada. Winters from Mexico to Colombia. When Mr. William Brewster was in West Virginia some years ago (Ritchie County), he found the crested flycatcher abundant. Throughout the entire State it may be found from the 24th day of April until the middle of September, when its household duties are over and it wings its way to a warmer

Song: I find great delight in listening to the songs or rather calls and whistles of this bird. Its notes are loud and clear and rise above the grand chorus of April and May songsters and sound far away over the hills. It is always easy to tell when the great crest has arrived from the south since its whistle can be so distinctly heard. A number of calls, scolding notes, alarm notes and whistles belong to this species.

Nest: The site of the nest is a hollow limb in some tall forest tree. It is said that a piece of cast-off snake skin is nearly always used in building. Mr. Frank M. Chapman says that the nest is usually not more than twenty feet up, but my observations lead me to believe that in this State the nests are rarely built lower than forty or fifty feet up in great trees. Eggs, three to six streaked longitudinally with chocolate, the ground color being creamy white.

PHOEBE (*Sayornis phoebe*).



Length: Almost seven inches. A short bird of compact form, known as "pewee" in many parts of our State. So well known that every school boy recognizes the day when the first "pewee" calls in early spring.

Range: Eastern North America. From the northern part of Mackenzie and other Canadian provinces southward to the mountains of Georgia and the northern parts of New Mexico this friendly little bird finds a summer home. In winter it is found in the southern part of the United States and as far south as the central Mexican states. Of course all our

PHOEBE.

State is included in this general range, and everywhere the phoebe is to be found from one end of the State to the other. In many places in the Alleghany Mountains this bird is quite as common as it is in the less elevated parts.

Habits and Usefulness: The buildings which men erect seem to

afford an ideal place for the phoebe's nest and long since this little bird has left the wilds of its primal home, has forsaken in many places the cliffs on which it formerly built its nest and has become almost domestic in its habits. This plain little bird is blessed with neither bright plumage nor beautiful song, but somber in color and unpretentious in song it has won its way to popular favor. Aside from the pleasant associations which the phoebe brings us as he comes each year to live again for a few months under the protecting eaves of barn or residence he is entitled to our kindest protection as an enemy of many noxious insects. The government investigators have compiled a list of harmful insects which the little flycatcher destroys and, without hesitation, pronounce it a useful bird.

Song: The notes of the phoebe are not sufficiently long and complicated to be called a song, nevertheless in the raptures of spring time, when love rivalries provoke the deepest emotions of the phoebe's heart, there sometimes comes a medley of notes intermingled with frequent and most fervent repetitions of the *phoebe, phoebe, phoebe* note, which those who hear might very appropriately call a song. However the note that one usually hears is the common *phoebe* call and a soft, subdued chirp given as the bird sits quietly watching for some passing fly.

Nest. I have many nesting records for the phoebe in West Virginia. Perhaps there is not an active and bright boy in the State who has not found a nest of this species, and most of us who like the woods and fields have found nests almost innumerable. A beam or rafter in an old outbuilding or even a dwelling, a bridge or a ledge of rock furnishes just the right sort of a place for the house-keeping activities of the phoebe. Nest built of moss, mud, grasses and hairs. In it are to be found from four to six white eggs, though occasionally the eggs are slightly spotted or speckled.



CROW (*Corvus brachyrhynchos*).

COMMON CROW.

to go a little farther south than their summer home has been. Along the Ohio river and along the Potomac many crows spend the winter months. In other places in the State I have seen them in the winter. In the mountains this species occurs. During the past summer, when visiting Black Mountain, I observed several crows attacking a small flock of northern ravens and forcing them to leave their feeding place and fly off to another range not far away.

Habits and Usefulness: The general habits of the crow are universally known. Its reputation is not good, and perhaps it deserves its bad repute. The theft of eggs, pulling of corn and stealing of fruit are all crimes against the farmer's best interests that are charged against the crow. To all these charges he must answer "guilty." Perhaps by coating the seed corn with coal tar and by guarding eggs and fruit a little more carefully, less harm would be done by this omnivorous bird. The insect diet of the crow includes many harmful species such as wireworms, cutworms, white grubs and grasshoppers. Summing up the charges against the crow and considering also his meritorious deeds Dr. Henshaw of the Biological Survey at Washington says, "But chiefly because of its destruction of beneficial wild

Length: A little more than 19 inches. A large black bird that needs description not for the sake of identification, but that many of our farmers may know its good acts as well as its bad.

Range: From far to the north in Canada throughout most of the eastern part of the United States the crow may be found in summer. Its winter home is in the United States and it may be found in many places in our latitude even in very severe weather. Of common occurrence in West Virginia, both in summer and in winter. Most abundant in the fall when long lines of crows may be seen as they gather together

birds and their eggs the crow must be classed as a criminal, and a reduction in its numbers in localities where it is seriously destructive is justifiable." However, it should be noted that Dr. Henshaw does not recommend the general slaughter of this interesting bird.

Notes: The common *caw*, *caw*, *caw-aw* of the crow is its usual note, though when in trouble with his wild neighbors of his own or other kinds he has a variety of garrulous notes that are hard to describe. The common *caw* is given with a variety of accents and emphasis. Some old hunters say that the number of notes is varied according to the mood of the bird and that by varying his calls he signals to others of his kind that may be within hearing.

Nest: The nest is a bulky affair made of sticks and lined with grapevine bark, grasses and other materials. It is usually placed in a rather tall tree and contains from four to six bluish green eggs marked with brown.

RED-WINGED BLACKBIRD (*Agelaius phoeniceus*).



Length: $9\frac{1}{2}$ inches or approximately that. One of the five kinds of blackbirds that are to be found in West Virginia. This is one of the smaller species and the male may always be known by the red spots on the shoulders.

Range: Breeds throughout North America from the region where trees do not grow, south through Mexico. In the winter it stays in the southern part of the United States and as far south as Costa Rica. The distribution of the red-wing in our State is limited only by the State boundary lines. In the lower elevations and in the lofty swamp lands such as the Cowen, Cran-

berry and other glades this species is to be found at the proper season of the year. About the Cowen Glades in Webster county it is very abundant, and breeds there in considerable numbers. Wherever we

find a swamp or a stream of sluggish water, an alder swamp or a great grassy meadow, there the red-wing with his sparrowy-appearing wife may be seen.

Habits and Usefulness: This bird is so common that its food habits are of very great importance, though not so much so as that of some of our other birds. Being gregarious these birds are capable of destroying a field of grain when once they attack it. Much of their food is of vegetable nature, consisting of seeds, grains and fruits. Almost one-third of their food is made up of animal matter. It is said that they eat many weevils, caterpillars and grasshoppers. In the prairie regions of the upper Mississippi valley and in the thousands of suitable nesting grounds to the north of our latitude the red-wings find a home that is to their liking, and here they are brought forth each year, the old ones increasing their numbers by great multitudes of young birds. From these northern nesting places they come in the fall and it is not at all strange to see very large flocks of them passing by us on their fall migrations. At such times they are not noisy nor musical as they are in the spring.

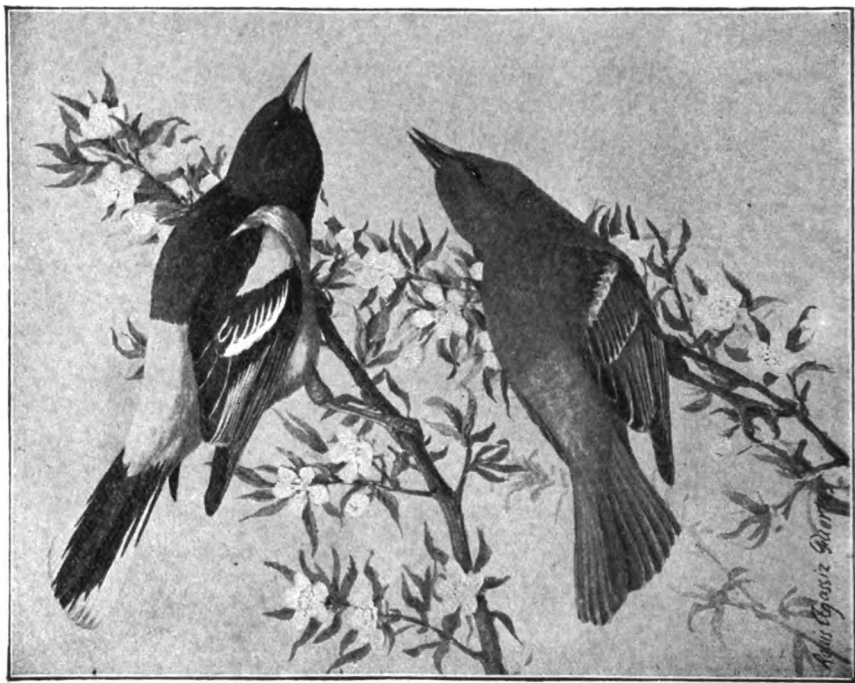
Song: Of all our blackbirds the red-wing is by far the most musical. The *O-ka-lee* song of this species is one of the most cheerful and delightful of all spring songs. In those early days of March, when one begins to look for the first signs of coming spring, suspecting now and then that he hears the first *Hyla* peeping in the swamp or wondering if he has not caught the perfume of some extra early wild flowers, this highly colored bird with black body, wings, head and tail and with shoulder-patches wondrously red with yellow margins, suddenly appears in the top of a tall tree and confirms all your hopes of coming spring by actually proclaiming that it is here by the utterance of some of his choicest phrases of song. The male frequently gives a shrill, piercing whistle when any dangers threaten his nest, and there are several other notes, the female having one or two distinctively her own.

Nest: The nest is a beautiful structure made of grasses and weed-stalks and placed in the shrubbery about four feet from the ground in swampy places. The eggs are pale blue, singularly marked and streaked with dark colors.

BALTIMORE ORIOLE (*Icterus galbula*).

Length: About $7\frac{1}{2}$ inches from tip of bill to end of tail. There are two species of Orioles in this State, the other being called the orchard oriole. Though the latter is quite common it is not so well known as the namesake of Lord Baltimore.

Range: The Baltimore oriole occurs in the summer in that great stretch of territory extending from the Rocky Mountains on the west to the Atlantic Coast on the east and from the central Canadian provinces to the southern states. In winter this brightly colored species resides in southern Mexico, Central America and Colombia.



THE BALTIMORE ORIOLE.

In West Virginia it is found exclusively in the Upper Austral and Transition Life Zones, that is, along the lower rivers and through the hill region of the State where the elevations do not run above 3,500 feet above the level of the sea. It is not unusual to see these birds of orange, black and white plumage in the sycamores or other trees along any of our streams outside the mountain districts.

Habits and Usefulness: The Baltimore oriole belongs to a group of

tropical birds having few representatives so far to the north. But of all this group there are no species more tastefully dressed than this species that is sometimes called "hanging bird" by boys and girls in West Virginia. Many wrongs have been charged to this bird, such as eating green peas, pillaging the cherry trees and devouring ripe grapes. Perhaps this bird has all these bad food habits. But, at the same time, there are many good traits that can be set down to his credit. Professor Edward Howe Forbush says, "The tussock, gipsy, brown-tail, tent, and forest caterpillars, the fall webworms, and even the spiny caterpillar of the mourning cloak butterfly, all are greedily eaten by the Baltimore oriole; and it does not usually swallow many, but merely kills them and eats a small portion of the inner parts. It thus destroys many more than would be needed to satisfy its appetite were they swallowed whole, while at the same time no recognizable portion of the caterpillar can be found in the bird's stomach." In the northern sections, where the gipsy and brown-tail moths are so destructive it is said that a Baltimore oriole is worth its weight in gold as an enemy of these ruthless pests. An entire orchard has been cleared of tents of the tent caterpillar by the tireless efforts and insatiable appetite of these birds.

Song: The notes of the Baltimore oriole are very musical. Not many birds of bright colors are gifted in song, but this species seems to be an exception. Its notes are wild, clear, and free. The song of no two individuals seems to be exactly alike. I have heard songs so different from the ordinary oriole song that I did not recognize them as coming from that species. In Parkersburg last spring I heard an oriole song so different from the ordinary type that I spent some time in trying to locate what I thought was a strange bird of some sort. What was my surprise when I saw that the song was coming from a very versatile Baltimore oriole high up in a woodland tree. This species has a great variety of notes and calls.

Nest: The pendulous nest of the Baltimore oriole is a common object of observation, and is often collected as an interesting specimen of bird architecture.



BRONZED GRACKLE (*Quiscalus quiscula aeneus*).**BRONZED GRACKLE.**

and the Rocky Mountains, and west of the main Allegheny ranges. Winters from the Ohio valley southward throughout the Southern States. Occasionally spends the winter here. On the very day on which I write (the middle of January) I noted three bronzed grackles flying over. Along such rivers as the Ohio, Great Kanawha, Monongahela, Little Kanawha, Guyandotte and Big Sandy these birds are especially common. At times they are seen in vast flocks.

Habits and Usefulness: This blackbird is a beautiful species with its dark, rich plumage shining with metallic iridescence, at one time, when the light is not reflected, appearing to be coal black, at another time, when the feathers reflect the sun's rays, either a royal purple or brilliant bronze. Because of its habit of gathering in large flocks about our towns and even in our cities this species is well known and readily recognized. The city parks are favorite nesting places and in the trees about our streets these birds congregate in great numbers at night causing not a little annoyance to those who live near by. Sometimes the grackles gather in flocks in the grain fields and do much harm to the growing or newly harvested grain. Birds' nests are pillaged by these birds, and thus some injury is done. Good things may also be said of this species. White grubs, weevils, grass-

Length: A large blackbird, about 12 inches from tip of bill to end of tail. In our State two of these large grackles, or blackbirds, are found. The purple grackle is the usual form east of the main Alleghenies and the bronzed grackle is the sub-species in all the western part of the State. **Range:** As has just been said, within our own State this sub-species occurs west of the mountains. In that section of West Virginia it is very common everywhere, though not often seen in the higher elevations. Its general distribution includes that great region south and east of Great Slave Lake, Newfoundland,

hoppers and caterpillars are eaten by these birds, and as they go walking, in crow fashion, about our fields and meadows in early spring it is an indisputable fact that they destroy many harmful species of insects and thus do great good.

Song: Some one has said that the noises made by a flock of bronzed grackles make one think that they have all been attacked by a sudden siege of influenza. The notes are harsh and unmusical, though there is something rather attractive in the jangling chorus of a hundred or more grackles. The call that is most familiar is a rich, low-toned note that the blackbirds utter as they fly.

Nest: These birds nest in small colonies, building their homes in the hollow trunks of decaying willow trees or among the thick foliage of conifers. The nests are made of mud and grasses and contain four or five eggs.

AMERICAN GOLDFINCH (*Astragalinus tristis*).

Length: A little more than five inches.

Range: Breeds from the interior of Canada south through the eastern part of the United States as far as northern Georgia. Winters over most of its breeding area and southward to the Gulf Coast. So far as West Virginia is concerned, it is found everywhere and at all times. Though not quite so common in the winter, it is frequently seen even in the coldest weather. In our mountain regions as well as in the lower levels of the Austral Life Zone this beautiful little sparrow is seen in great numbers. I have seen many of them at Cheat Bridge, Richwood, Hanging Rock, Durbin, Cranberry Glades, Horton, Turkey Bone Mountain, Wildell, Parsons, North Mountain, Scherr and Franklin and at other points in, or adjacent to, the mountains. No species on our entire list has a more general distribution within our State than does the Goldfinch.

Habits and Usefulness: Because of its habit of alighting on some thistle stalk and feeding upon the seeds this species is often called "thistle bird"; because it finds the rich red leaves of the beet to its liking many call the goldfinch "beet bird"; and because its song and plumage resemble that of a canary it is frequently called "wild canary". During the winter months the male bird assumes the sober greenish-brown coat of the female and with silent flights, scarcely uttering a note, large flocks of these little birds fly about in the open woods or in thickets of briars where weed seeds are abundant. When spring comes the male takes on his coat of lemon yellow and

black and the entire company arouses to a life of joy and song. The food of this finch is made up of weed seeds and insects. Many species of weeds which they hold in check are harmful, and many of the insects which they destroy are hurtful to the farmer's interests. Thus we see that the goldfinch is a useful little bird and should always be protected.

Song: The goldfinch has a beautiful song which it usually utters as it flies with undulating flight through the air on clear bright days. A peculiarly plaintive call, a note that is uttered only in nesting time, and several other notes and calls make up its repertoire. One who has not heard a large flock of these little yellow birds singing about the tops of the apple trees on some bright June morning has missed a vocal treat that is most entertaining.

Nest: One of the latest species to build its nest is the American goldfinch. Like the bobwhite it waits until nearly all the other birds have finished their home duties, then begins a beautiful and very substantial sort of nest in a maple, apple, sugar-berry, elm or some other sort of tree that has dense foliage. Here from three to six pale bluish white eggs are laid and the young are reared.

CHIPPING SPARROW (*Spizella passerina*).



CHIPPING SPARROW.

Length: Almost $5\frac{1}{2}$ inches, about one inch shorter than the English sparrow. Since we have about thirty different species of sparrows in West Virginia one should know some of the marks that distinguish one kind from the others. The mark that serves best for the identification of the chipping sparrow is its chestnut brown cap together with a white line above the eye, a black line through the eye, black bill, and general grayish color. Often called "striped bird" or "hair bird".

Range: Found in North America, east of the Rocky Mountains, and nests from the interior of

Canada to central Georgia and other parts of the Southern States. A distributional map, which I have prepared for this species, shows records for nearly every county in the State. Of course a complete study of the distribution of the chipping sparrow would give records of its occurrence in every county. In most places it is abundant. Not quite so common in the higher sections, yet I have found it among the mountains in practically every part of the Allegheny ranges.

Habits and Usefulness: Mr. Chapman says, "The chippy is among sparrows what the phoebe is among flycatchers—the humblest, most unassuming member of its family. Both show trustfulness, which, in spite of their unattractive appearance and far from pleasing voices, wins our affection." The chipping sparrow is the tamest species we have, and often comes about our homes, feeds on our porches, and makes its nest in the vines regardless of the presence of many people each day. A friend of mine has told me of the presence of a chipping sparrow around his home near Freemansburg, for the past four years. During the past two seasons it has been positively identified as the same bird because in an accident three years ago it lost one of its feet. Each year, for two years past, it has made its way back again from its southern home to exactly the same farm and the same shrubbery in which it has built its nest for these consecutive seasons. Last fall it left its summer home on the first day of October, and those who have been watching it with so much interest from year to year look forward to its return this spring and confidently hope that it may be able to make its long journey in safety. This is a very useful species because of the large number of insects destroyed. Some one has watched a nest of the chipping sparrow in which there were four young birds. After making careful calculations it was found that this little brood devoured about 238 insects every day.

Song: An insect-like trill consisting of syllables somewhat as follows,—*chippy-chippy-chippy-chippy*. This is its only song. While it can not be called musical, it is very pleasant to hear this little ditty as one listens in March for the first voices of spring.

Nest: Because of the horse hairs used in the building of its nest, this species is often called "hair-bird." The nest is usually built in an apple tree about the orchard or, sometimes, in an oak or crataegus tree in the open woods. About four eggs, blue with black spots.

CAROLINA JUNCO (*Junco hyemalis carolinensis*).

Length: A little less than $6\frac{1}{2}$ inches, and slightly larger than the slate-colored junco, or snowbird, which is so generally distributed throughout our State in winter time. This is a peculiarly interesting form of the junco found only in the high regions of the southern Alleghenies. In the research work which the writer has carried on for some years among the mountains of West Virginia, he has found the Carolina junco very abundant in many sections of the higher ranges and in the lesser ranges to the west. A map is shown on another page which gives an idea of the West Virginia breeding range of this species. As the school boys and girls look over this map they may readily see that the black dots are to be found only in those counties through which the higher mountain ranges pass.

Range: The summer range of this species has been given in the general remarks above. The winter range of this bird is not definitely known. Specimens which I observed at Pickens last winter were not



Photo by Fred E. Brooks.

NEST OF CAROLINA JUNCO ON SUMMIT OF SPRUCE KNOB.

true *Junco hyemalis carolinensis*, but were of the northern form. I have never found a Carolina junco in West Virginia in the winter time. Probably it is to be found in the valleys adjoining the mountain regions in which it nests. Mr. G. Eifrig, a naturalist who did much ornithological work a few years ago in West Virginia just across the river from Cumberland, Maryland, found this sub-species in the winter months in that section. It has also been reported by Mr. Thad. Surber as a winter resident at White Sulphur Springs.

Habits and Usefulness: All species of juncos are much alike in habits. Our common slate-colored junco is a familiar bird and comes about our homes in winter time, often taking food from the feeding places which are prepared for the birds. In little flocks of a dozen or more they associate with tree sparrows and other birds that feed on the seeds of various plants and fly about over the snow, gathering their food wherever there is opportunity. In the summer time the Carolina junco, as well as other nearly related species, feeds upon insects and destroys great numbers of them.

Song: At times the trill and low sweet song of the Carolina junco is one of the characteristic songs of the mountains. I have not been able to distinguish any difference between the songs of the slate-colored and Carolina junco. Both have a ring of good cheer, and a flock of juncos singing is almost as charming as a like number of gold-finches.

Nest: The accompanying map will show the localities in which I have found the nest of the Carolina junco. In most of these places they are found in very great numbers. The nesting period is long, continuing from the middle of May to the last half of August. I have found several nests with eggs in the middle of August. This would seem to indicate that as many as three broods are sometimes reared by these industrious little birds. Along the roadsides in the Yew Mountains and Rich Mountains I have found a great many nests of this species hidden away among dry grass blades or old ferns. Often the nest is placed among the roots of an old up-turned spruce tree. Eggs, three to five.

West Virginia its distribution is general, being found in great numbers at all seasons of the year from the Ohio River to the top of the highest mountains.

Habits and Usefulness: Dr. Henshaw says, "About three-fourths of its diet consists of the seeds of noxious weeds and one-fourth of insects. Of these, beetles, especially weevils, constitute the major portion. Ants, wasps, bugs and caterpillars are also eaten." In its habits the Song Sparrow is domestic, tame, and very easily studied. Unlike some of our rare and elusive sparrows, which can only be found on rare occasions and studied under great difficulties, the song sparrow suffers one to approach within short range and study its every movement by the hour with field glass or with the naked eye.

Song: Ernest Thompson Seton has said of this species, "Its irrepressible vivacity and good spirits in spite of all circumstances are aptly illustrated by the fact that its song may be heard in every month of the year and in all weathers; also by night as well as by day—for nothing is more common in the darkest nights than to hear its sweet chant in half-conscious answer to the hooting of the owl or even the report of a gun. * * * * Its alarm note is a simple metallic *chip*, which is very distinctive when once learned. But its merry chant—which has won for it the name of 'song sparrow'—is its best-known note. It is a voluble and uninterrupted but short refrain, and is, perhaps, the sweetest of the familiar voices of the meadow lands. The song that it occasionally utters while on the wing is of quite a different character, being more prolonged and varied." Here in our State the song sparrow may be heard singing on almost any day in the year. Even in the most frigid weather, if the sun shows its face for only a little while, one of these silver-tongued birds will fly up on a fence post or some slight elevation and pour forth its song in praise of joy and light and life.

Nest: A substantially built structure placed in low bushes. Eggs, four to five.

CARDINAL (*Cardinalis cardinalis*).

Length: A little more than 8 inches. A bird of vigorous strength, bright plumage and striking character. One of our three really red birds, the other two being the scarlet tanager and the summer tanager.

Range: Distributed throughout the southern and eastern parts of the United States, not being found west of the Great Plains nor north of Ohio and the Hudson valley. Only locally migratory, gathering

in the colder days of winter in the more sheltered places, but remaining throughout the year near the same section of country in which the summer is spent. In West Virginia the cardinal is one of our common species and occurs throughout the entire year. Especially noticeable in the winter time when the dull ground and faded leaves make more effective its bright colors. There is no more beautiful



CARDINAL (*Cardinalis cardinalis*).

picture in nature than that of a large number of brilliantly red cardinals feeding about an evergreen tree on a bright snowy day. Such a sight may be seen in West Virginia on almost any winter day.

Habits and Usefulness: The cardinal is usually found among the

tangled thickets in old brier fields or among the bushes that grow along the river banks. Wherever there is an intricate mass of wild grape vines or an almost impenetrable bunch of shrubbery growing, there this bright bird may be seen. He is also quite domestic and sometimes comes very close to our homes either in the country or in our towns and cities. The cardinal may be called a vegetarian since a large percentage of his food is of that nature. Mr. McAtee, of the Biological Survey at Washington, has concluded from his investigations that the "red bird" does about fifteen times as much good as harm.

Song: The notes of this bird consist of two or three sharp, emphatic calls and chirps and two or three somewhat varied whistling songs. The song is very pleasing and, because of his song and beauty, he is often kept as a cage bird, though this is contrary to law in some of our states.

Nest: Very early in the spring the male cardinal begins to whistle his love song to his green mate. The nest is soon built, usually about the middle of May, being made up of twigs, grape-vine bark, grasses, and rootlets. This is skilfully hidden away in a bunch of briars or among the thorny branches of a black haw or wild crab-apple bush. In it are four to five eggs, pale blue with brown markings. Several broods are reared. This summer I found a nest with fresh eggs in it on the 8th day of August along the Great Cacapon river in Morgan county.

SCARLET TANAGER (*Piranga erythromelas*).

Length: A little more than seven inches. Slightly smaller than our cardinal and to be distinguished from it by black wings and tail, in strong contrast with the fiery scarlet of the rest of the plumage, the absence of a crest, and the disposition to live in the deep woods. The summer tanager, a near relative of this species, is entirely red, though not so bright as the cardinal, and also without a crest. The tanagers belong to a group of birds that are very common in tropical countries, but have very few representatives in this latitude.

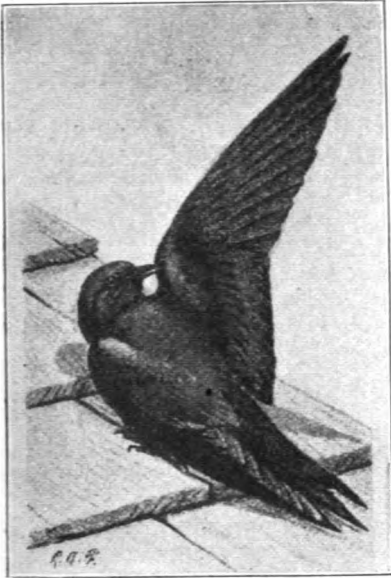
Range: This beautiful bird is found in the eastern part of the United States from the northern border southward to the mountains of Virginia and Georgia. It is quite generally distributed in West Virginia. In some of our less elevated mountains the species is abundant. I have found it in great numbers in the Turkey Bone

region, some miles above Pickens, in Randolph County. On Blue Knob, near the head of Cranberry river, on the 2nd of last June, I found this species to be very common. In all the hill country of West Virginia the scarlet tanager abounds where there are large forested areas.

Habits and Usefulness: As already stated this bird loves the deep woods, and its rich red plumage may be noted in strong contrast with the deep green and other somber shades of the dark forest. Occasionally these birds come out into our orchards or fly freely about in the open woods. Their food is mostly of such character as to make them very useful birds. A large percentage of it is made up of woodland insects. The great number of birds of different kinds that police the woods at all seasons of the year are of value incalculable. Up and down the trunks work the woodpeckers, creepers and nuthatches; around and over the limbs run the warblers and titmice; and these together with the vireos, tanagers, thrushes, ringlets and gnatcatchers keep careful watch for such insects as devour the foliage of the forest trees. Were it not for the great host of forest bird-wardens every leaf in the woods would, in a few years, be destroyed by the innumerable hosts of fast-multiplying insects. The scarlet tanager does its important part in destroying forest-haunting caterpillars and other species that feed upon the leaves of trees.

Song: The *chip-churr* call-note of the tanager is a familiar sound in the woods. But, better than this, is the wild, loud song that one hears for the first time each year on the 24th or 25th of April.

Nest: A few years ago there lived in Hancock county a very earnest student of bird-life, Rev. W. E. Hill. His description of the discovery of a scarlet tanager's nest is about as good a description of the nesting-habits of this bird as can be given. "Discovered in a small, retired wood the nest of a scarlet tanager. This was placed in the top of a dead crab-apple tree, covered with wild grapevine, about 20 feet from the ground. I was enabled to reach it by climbing an adjoining sapling. It was loosely constructed of light, dried weed-stalks, with a few dried thorn blossom-stems and horse-hair for a lining. It contained four eggs—two being the owner's and two being a cow-bird's. The former's eggs are somewhat elongated and of a light blue color, spotted with reddish brown."

PURPLE MARTIN (*Progne subis*).

Length: 8 inches. The largest of our swallows.

Range: Throughout North America, south of Saskatchewan and Ontario, east of Montana and Idaho, and south to the Gulf Coast. Winters in Brazil. Little colonies of these birds are found in many places in West Virginia. In almost any part of the State these birds will come and take up their abode if a suitable box is erected for them. Indeed, in some places I have seen large numbers of them, attracted to a certain place because of the abundance of food, the proximity of plenty of water, and the good care given to them by those who

PURPLE MARTIN. provided nesting sites. Not at all common in the mountainous sections.

Habits and Usefulness: This bird is usually seen flying about in the air near some town or not far away from a farm-house. Occasionally one may see a flock alight in a tree or skim leisurely over the surface of the water in some river or smaller stream. Often a bird will fly down and strike the water making quite a splash. Evidently this is the manner in which they take a bath. But, most often, these birds are to be seen flying high in the air, when the sun shines clear and bright or when the dark clouds drive furiously through the heavens. They arrive early in the spring, sometimes as early as the last days of March, but because they are rather sensitive to cold and depend for food entirely upon the insects that fly about in the air, they sometimes perish in the cold rains of early April. Prof. Forbush says, "It feeds largely upon some of the greatest pests of the farm. Rose beetles and May beetles are caught in large numbers. John S. Russell writes that a quart of the wing-cases and other rejecta of that common pest, the striped cucumber beetle, were taken from a hole in a martin box." Because of their great usefulness and general

attractiveness very special efforts are being made in some of the northern states, where this species is almost extinct, and in other states where it is very rare, to reinstate this beautiful bird by bringing them or their eggs in from other localities and protecting them until they become thoroughly established once more.

Song: The rich tumultuous notes of the martin are among the sweetest sounds in nature. I need not describe the song of this species since it is so well known to almost every one.

Nest: Formerly this species nested in trees, or in gourds which were provided by the American Indians. But in recent years the nests are built almost exclusively in the little "martin boxes" that may be seen about almost every home in the country as well as in many of our towns. The nest is made of straws, twigs and feathers, and in it are laid four or five white eggs. Nesting usually begins about the middle of May.

CEAR WAXWING (*Bombycilla cedrorum*).

Length: Slightly more than seven inches. The only representative of its family to be found in this part of the United States. Gregarious even in nesting time, and in the fall gathering in immense flocks. Called "waxwing" because of the little wax-like points on the ends of the secondary wing-coverts.

Range: North America. Breeds from the central provinces of Canada as far south as the southern tier of states. Winters throughout the greater part of the United States and in Cuba, Mexico and Panama. In West Virginia it is not at all common during the winter, and the birds which migrate do not reach the latitude of West Virginia till rather late in the spring. In the summer season these birds are very abundant in nearly every section of the State. Perhaps the most common species in the mountains is the cedar-bird. Among the hemlocks and spruces as well as in the deciduous forests of the higher Alleghenies this species may always be noted. Down in the hilly section of the State these birds also abound.

Habits and Usefulness: Gregarious, silent, richly-colored, polite and fruit-eating are adjectives that describe this strange bird very well. As you pass by a clump of poke-berry bushes next fall you may hear, very suddenly, a soft whir of wings and a faint *tsee-tsee* coming from some place near by. Looking about you may observe a large flock of cedar-birds as they are alighting on the bushes and as they begin to eat the purple fruit. With crests erect, with their rich grayish-

brown plumage fairly glistening in the sunshine, sitting in an upright position, the red wax on the wings and the yellow bands on the ends of their tails very conspicuous, they eat great quantities of the poke-berries and stain their beaks and lores with the dark-red juice. These birds feed largely upon wild fruits, but often transgress the laws of property rights and partake freely of the choice fruits of cherry trees and strawberry beds. Many insects are eaten in summer and among them thousands of our most destructive caterpillars. The cankerworm seems to be a favorite morsel. I believe this bird should be carefully protected by law and by public sentiment. The cedar-bird is especially to be admired because of its devotion to its young.

Notes: Of all our birds which are classed as song-birds this is the most silent. The only note I have heard is the little hissing note mentioned above.

Nest: This species builds its nest late in the season after the other birds have long been engaged in the trying task of nest-building and housekeeping. The nest is placed from ten to twenty feet up in a tree, usually a fruit or shade tree, and is a bulky affair made up of many sorts of materials. Often wool or wild cottony substances are woven in with sticks, rootlets, grass and moss. From three to six eggs are laid and these are dull white obscurely spotted and blotched with black and umber.

WARBLING VIREO (*Vireosylva gilva*).

Length: Almost six inches. A shy, gray bird that frequents the shade trees along the streets. There are seven species of vireos in West Virginia—the red-eyed, white-eyed, blue-headed, mountain solitary, yellow-throated, Philadelphia and warbling vireos. Of these the warbling is the best known and most musical. It is the only one that comes frequently about the streets of our towns and cities and sings amidst the discord of noises heard there. The vireos are all plain in plumage and, as the Latin name (meaning *I am green*) suggests, are usually olive-green in color.

Range: In the nesting season this little vireo is found in eastern North America from the southern parts of Canada south to the northern border of the Southern States. The winter home of this bird, though it must be somewhere south of the United States, is not known. Who will be the fortunate person who finds the winter home of the warbling vireo? In West Virginia it is found chiefly in the Austral



FIG. 1.

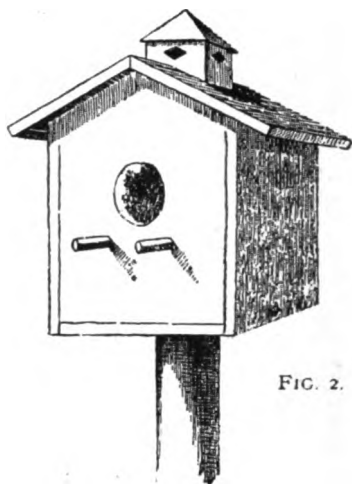


FIG. 2.

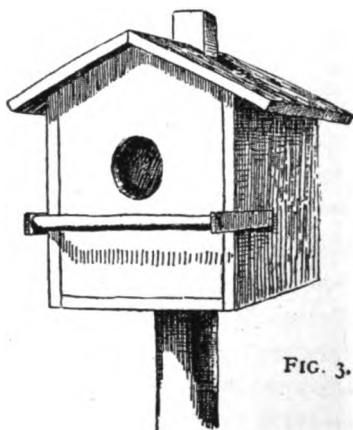


FIG. 3.

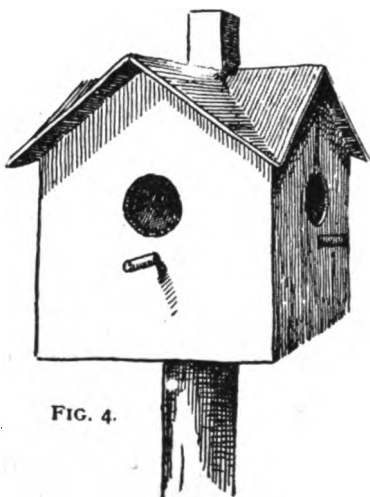


FIG. 4.

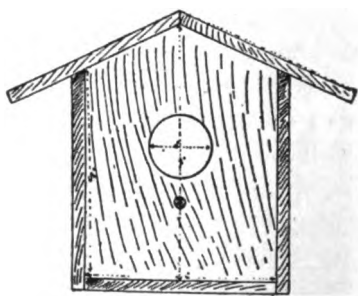


FIG. 5.

SOME IMPROVISED BIRD BOXES.



FIG. 6.

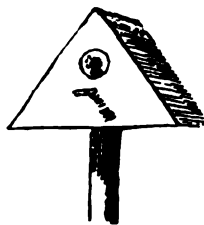


FIG. 9.



FIG. 10.

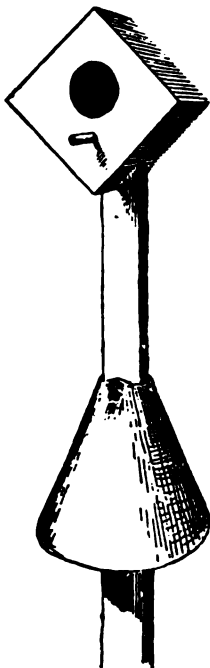


FIG. 7.

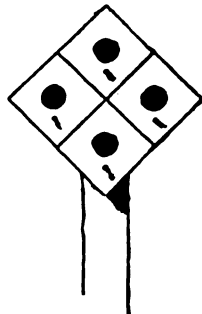


FIG. 8.

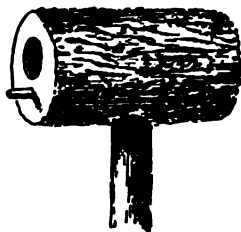


FIG. 11.

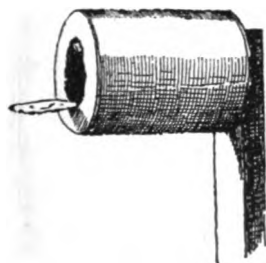


FIG. 13.



FIG. 12.

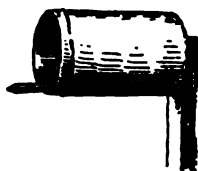


FIG. 14.

SOME IMPROVISED BIRD BOXES.

and Lower Transition Life Zones, that is in the less elevated parts of the State.

Habits and Usefulness: Professor Forbush says, "The warbling vireo, like its closely related congeners, moves about amidst the branches of trees, flying only occasionally to the ground, or moving from tree to tree in short flights." Since it feeds about the trees almost all the time it may be readily surmised that its food is made up of caterpillars and other leaf-eating insects. And this may be proven by investigation. Thousands upon thousands of destructive insects are gathered each year from our shade trees and eaten by these little birds. Some of the worst enemies of trees are on the warbling vireo's bill of fare.

Song: The vireos are all persistent singers, and this species is particularly faithful in rendering its daily program of music. As soon as these little birds arrive from the South they begin to sing and, with the exception of a little period of silence in August, continue to sing till they leave this region early in October. Not only so, but they sing all day long, even in the heat of the noon-day July sun. There is a sort of perseverance in song in this species which is worthy of emulation on the part of some creatures of a higher order of life. In the vireo's heart joy seems perpetual and his song never ends.

Nest: The pendulous nest of this species is built near the top of some tall shade tree, is composed of plant-fibers and grasses, and contains three or four eggs.

BLACK-AND-WHITE WARBLER (*Mniotilta varia*).

Length: About five inches. A very small bird sometimes thought to be related to the creepers or nuthatches because of its habit of running about the tree-trunks in search of food. The name well describes the appearance of this warbler.

Range: Found throughout the eastern part of North America in the summer and spends the winter months in South America, though a few remain in Florida, the West Indies and Texas. Since its summer range extends far to the north in Canada, it is to be expected that it may be found in the Canadian Life Zone in West Virginia. My investigations have proven this to be true, for, even in the highest mountains of the State, I have found this species present in considerable numbers. Very common in our open woodlands.

Habits and Usefulness: The creeper-like habits of this bird make it a very interesting species. Wherever one goes about the woods in this section of the country he may see these little black and white birds

busily feeding about the trunks and limbs of trees, making their way about the trunk and around the limbs with all the ease of a nuthatch or woodpecker. All the warblers are insectivorous, and this is one of the very common and very useful members of the family. Many wood-boring insects, caterpillars, and curculios are devoured by these little birds and thousands of eggs are hunted out from under the bark and greedily eaten. In those regions where the gypsy moth has become so destructive to shade trees this bird has been found very useful in helping to hold them in check.

Song: Early in spring, usually about the 13th or 14th of April, I begin to listen for the thin, high-pitched, wiry song of the black-and-white warbler. On the first warm calm day after the middle of that month I am sure to hear the *wee-see, wee-see, wee-see, wee-see* song of this bird should I be passing a tract of woodland, and, when I hear it, joy comes to my heart for I know that spring has come and that the great host of migrant warblers will soon arrive. Aside from this song there is a sweet rambling song that is sometimes heard, especially when two male birds are engaged in a contention of some kind.

Nest: When you are wandering in the woods some day you may find a pretty nest made of fine strips of bark, wild grasses and hairs quite skilfully concealed at the roots of a tree or beside a log or stump. Though there are several species that nest in such locations as this, the nest of the black-and-white warbler can easily be identified by the presence of the old birds near by. They always come if a squeaking noise is made on the back of the hand, and the female is often seen trailing along the ground, when flushed from the nest, as if she were sorely wounded.

YELLOW WARBLER (*Dendroica aestiva*).

Length: Slightly more than five inches. Often called "yellow bird" or "summer yellow bird."

Range: In North America, east of Alaska and the Pacific Slope, this little bird nests from the limit of trees to the north, to Nevada, New Mexico, Missouri, and South Carolina on the south. Thus it may be seen that its breeding area is great. It spends the winter from Yucatan to Guiana, Brazil and Peru. It is to be found in summer in practically all parts of West Virginia where there are willow-bordered streams or where the land has been cleared. Not found in the deep woods. In a recent number of the *OEOLOGIST*

Mr. Simpson gives a list of the warblers of Doddridge county, and of the yellow warbler he says, "Arrived April 17th to May 1st. Rather scarce. A pair was found now and then about the thickets along the streams near fields and farms. Not a common breeder, as the country was hardly suited to them." About forty years ago Mr. W. E. D. Scott made a list of the birds of Kanawha County. Of this species he says, "Not common, but found generally distributed." In Mr. Brewsters' list of the birds of Ritchie county, also made about forty years ago, he says of the yellow warbler, "Restricted entirely to the belt of willows, etc., along the margin of the creek, where it was not uncommon. First specimen noted April 29th." It would seem from these and other notes, which might be quoted, that the yellow warbler has become more common in our state in recent years, and that it is much more abundant in those sections where large improvements have been made, orchards planted, etc.

Habits and Usefulness: This attractive little warbler is the most sociable member of the entire family, finding a congenial home in the shrubbery of our lawns and the trees of our orchards. During more than five months of each year they search through the leaves of our shade and fruit trees for their food, finding many caterpillars, beetles, aphids and other insects. It would be difficult to find a more useful species.

Song: Its song has been written as follows: *Wee-chee, chee, chee, cher-wee*, though any attempt to spell the syllables of a wild bird's song is a vain and imperfect method of describing it. This warbler's song is simple and pleasing, and has an element of good cheer in every note.

Nest: A white bird's nest may often be seen in the willow trees along our smaller streams or in the apple and cherry trees of our orchards or yards. Upon investigation it will be found that this nest is composed of plant down and other light materials, compactly woven together. Such a structure is the home of the yellow warbler. Very often the cowbird imposes upon this little bird the duty of hatching her eggs and rearing her young. Sometimes the warbler outwits the cowbird by building a second story to her nest, and thus disposing of the alien egg.

YELLOW-BREASTED CHAT (*Icteria virens*).

Length: Almost $7\frac{1}{2}$ inches, the largest one of our warblers.

Range: Eastern North America. Found nesting in the summer time from the northern tier of states south to the Gulf Coast. Win-

ters in southern Mexico. Wherever there are thickets or old burnt-over tracts among the hills and mountains of West Virginia this species is found. Usually very abundant in most sections of our State.

Habits and Usefulness: This species is not of so great economic importance as others that are mentioned in this list, but so remarkable are some of its ways and so unique is its song that I have included it in this list for the purpose of calling attention to some of the exceedingly attractive features of bird life. Mr. Frank M. Chapman, in his useful "Handbook of Birds" says, "Bushy undergrowths or thickets in partial clearings form the home of the chat. After an acquaintance of many years I frankly confess that his true character is a mystery to me. While listening to his strange medley and watching his peculiar actions, we are certainly justified in calling him eccentric, but that there is method in his madness no one who studies him closely can doubt. Is the odd jumble of whistles, *chucks*, and caws uttered by one bird in that copse yonder, or by half a dozen different birds in as many places? Approach cautiously, and perhaps you may see him in the air—a bunch of feathers twitched downward by the queer, jerky notes which animate it. One may suppose so peculiar a performance would occupy his entire attention, but nevertheless he has seen you; in an instant his manner changes, and the happy-go-lucky clown who a moment before was turning aerial somersaults, has become a shy, suspicious haunter of the depths of the thicket, whence will come his querulous *chut, chut* as long as your presence annoys him." Food, mainly of insects that infest the briery thickets where the chat feeds.

Song: In the quotation given above the song has been partially described. For hours the yellow-breasted chat will sit on a prominent perch at the top of some tree out in an open field near his briery haunts and sing the broken song which is characteristic of him. With all deliberation he sits and sings as if time were nothing to him, his throat swelling with every note, like that of a toad in the water in spring time, his bright yellow throat and olive-green back reflecting the rays of the morning sun. A flight song, with hastily uttered confusion of notes is also heard very frequently. Very often I have heard this species singing at night.

Nest: Large nest of coarse materials placed in shrubbery two or three feet from the ground. Three to five speckled eggs.

CATBIRD (*Dumatella carolinensis*).

Length: Almost nine inches.

Range: Found in summer or winter in almost every part of North America, though its summer range does not extend north of the central part of Canada, nor does it occur along the Pacific Coast. In the United States it nests in all the central and eastern part, and is occasionally found in winter in our middle states, though not at all common north of the Southern States. During the summer months great numbers of these birds are found throughout West Virginia. To my surprise I have found this sociable bird quite common in the wildest retreats of our uncut mountain forests, seeming quite as much at home along the swift, clear rivers and in the dense forests as in our door-yards or in the shrubbery of a well-kept city lawn.



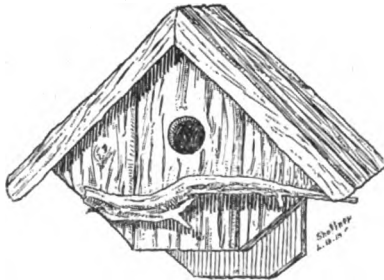
THE CATBIRD.

Habits and Usefulness: In its general conduct this bird is sociable, friendly, but rather excitable and noisy. Whenever I wish to attract a number of birds in the summer time, I find, if possible, a nest of the catbird and, standing near it, make a squeaking noise by placing the back of my hand to my lips. Very soon the catbirds will fly about

in great excitement fearing that something has attacked one of their young or some other bird. Their loud distress calls soon bring other birds near, and soon great numbers of birds are flying about in the trees and one has opportunity to make a list of practically all the birds in the community, the catbirds, of course, being unharmed by this little plan of working upon their emotions. Such a plan may be followed near any bird's nest with similar results. The economic status of the catbird is in question. While they destroy many harmful insects, they also eat great quantities of our choicest fruits. Practically all of our small fruits are eaten by them with great relish, and at times certain trees are made bare of their fruit before it can be gathered. However, after carefully reviewing the case of the catbird Prof. Forbush says, "From the evidence at hand we must conclude that, though the catbird is sometimes a nuisance to the fruit grower, it must be tolerated and even encouraged for the good it does. The problem before us is not how to destroy the birds, but how to keep both birds and fruit."

Song: This bird is like its near relatives, the brown thrasher and the true southern mockingbird, a great songster, singing not only its own notes, but imitating the songs of other birds and various sounds that it hears. A catbird that I once heard frequently crowed like a rooster and imitated other birds as well. The common mewling call, which gives the bird its name, is so often heard that it needs no description. To name all the notes of the catbird would be impossible, for its song is varied as few songs are.

Nest: The nest is built about the middle of May and the materials used are twigs, roots and grasses, making a large and very substantial structure. Three to five eggs are laid, and these are dark bluish green in color.



CAROLINA WREN (*Thryothorus ludovicianus*).

Photo by Fred E. Brooks.

CAROLINA WREN.

Length: $5\frac{1}{2}$ inches from tip of bill to end of tail. This is the largest of our wrens, and should be carefully distinguished from the house wren, Bewick's wren, and winter wren.

Range: The range of this species extends throughout the eastern part of the United States from Ohio and Pennsylvania, the Hudson and Connecticut Valleys, to the Southern States as far as northern Florida. This wren is resident in West Virginia and abounds in almost every section of the State throughout the entire

year. As common in winter as in summer. High up in the mountains it is not found in great numbers, though heard and seen occasionally.

Habits and Usefulness: As are all the wrens, this species is quite tame and frequently comes about our dwellings and builds its nests there. The local distribution of this species is quite remarkable, being found as a common bird in clearings and even in the woods far away from any house and also about the streets and lawns of some of our larger towns. This bird is particularly common about Morgantown, where its song may be heard at almost any time during the year. So easily does the Carolina Wren adapt itself to circumstances that one may find it alike about the log-cabin of the mountaineer, the fine home in the city, or away in the forest beyond the homes of men. The food of this bird is made up of insects, and he gathers them in great numbers at all seasons of the year. Nervous, active, and jubilant in spirit this great "mocking wren" works with tireless energy, sings with unbounded enthusiasm, and fills its place in nature as worthily as any bird we know.

Song: Mr. Frank M. Chapman in describing the song of this species says, "Of course, so excitable a nature must find other than physical outlet for its irrepressible energy, and the bird accompanies his movements by more or less appropriate notes: scolding *cacks*, clinking, metallic rattles, musical trills, tree-toad-like *krrrrrings*—in fact, he possesses an almost endless vocabulary. He is sometimes

called mocking wren, but the hundreds of birds I have heard were all too original to borrow from others. In addition to his peculiar calls he possesses a variety of loud, ringing whistles, somewhat similar in tone to those of the tufted titmouse or cardinal, and fully as loud as, if not louder than, the notes of the latter. The more common ones resemble the syllables, *whee-udel, whee-udel, whee-udel* and *tea-kettle, tea-kettle, tea-kettle*."



A HOUSE WREN AND HER HOME.

Nest: The nest is built like that of most of our other wrens, in an old hollow fence-rail, in a box provided for the birds or erected for some other purpose, or in any sort of a crack or cranny about the house or other out-buildings. From four to six speckled eggs.

TUFTED TITMOUSE (*Baeolophus bicolor*).

Length: Six inches in length. A rugged, hardy bird in form like a cardinal and plumbeous gray in color.

Range: Found throughout the southeastern part of the United States. Resident throughout its range. In West Virginia it is found in every locality in the State, and in many places it is very abundant. Just as common in winter as in summer, and even more

noticeable at that season of the year when other birds are not so common.

Habits and Usefulness: It seems to me that this bird should be accounted a special treasure to West Virginians. Farther north the bird becomes very rare and as far north as New England this species is not found at all. Here it is very common in every locality and at every season of the year. When one is out in the woods or passing by a thicket, he often sees a gray or slate-colored bird fly up suddenly from the ground, or pass with noisy flight from one tree to another. Upon further observation it may be noted that the bird has a crest, a piercing black eye, and a strong conical beak. Watching for a little while the observer will note that the bird feeds much among the dry leaves that have fallen to the ground or that may be clinging to some fallen tree or dying branch. Very often these birds will find a nut or a mass of leaves in which some eggs, pupae or larvae are hidden away, and work diligently till the nut is opened or the insect food extricated. Sometimes the birds fly up from the ground carrying a leaf or a nut in their bills. The food consists of woodland insects and nuts, though insects form by far the largest part of their sustenance. The food-habits of this bird have not been studied as carefully as might be. I believe it will be learned upon investigation that they destroy great numbers of our most destructive forest insects.

Song: One of our best songsters. The common, *peto, peto, peto*-note is familiar to all and is one of the most joyous songs of spring. There are scolding notes, call notes, and alarm notes, besides a *dee-dee-dee-dee* call quite like one of the notes of a chickadee.

Nest: The nest is built in a hollow tree-trunk. I have found several nests in West Virginia, and all have been in trees some distance from the ground. The eggs are from five to eight in number.



THE AVERAGE CAT-AT-LARGE KILLS FIFTY WILD BIRDS A YEAR.

WOOD THRUSH (*Hylocichla mustelina*).

Photo by Fred E. Brooks.

FIRST NEST OF OLIVE-BACKED
THRUSH FOUND IN WEST
VIRGINIA.

Length: A bird of good size, about $8\frac{1}{4}$ inches long. To be carefully distinguished from its near relatives, the hermit thrush, olive-backed thrush and veery.

Range: This bird is found throughout all the eastern part of the United States from our northern boundary to Texas, Louisiana, and northern Florida. The winter months are spent in the warm regions of southern Mexico, Cuba, and Jamaica. Within our own State this beautiful brown thrush is common in the summer months from April 25th to the first week in October. While not so common in the mountains as in the lower hill region, it may often be heard singing in the higher elevations where the veery makes his home and sings his wonderful

song. It may be said of the wood thrush that it is a very common summer resident in West Virginia.

Habits and Usefulness: As the name of this bird indicates, it is a bird of the woods, though I have often seen it in great numbers about the lawns in Charleston and in other large towns and cities in West Virginia. However its original home and the place it loves best is the quiet woods. There it flies about on silent wings and in its love for solitude makes its home far from the noisy haunts of men. The food of this bird consists of insects and fruit. Many insects, such as earthworms, click beetles, grasshoppers, crickets and others are eaten, but the wild fruits that form a part of the bill of fare bulk large in making an estimate of the food of the wood thrush. The fruit, however, is mostly of the wild varieties.

Song: There is no more beautiful song in nature than that of the wood thrush as it sings at twilight or very early in the morning, filling the woods with the wondrous melodies of its voice. Others may prefer the song of the veery, some may praise the song of the hermit thrush, and other lovers of bird music may have their favorite

avian musicians, but as for me I love the wood thrush best of all. Along the Elk River I have heard this bird sing as I have not heard it elsewhere. There, in their abundance, they gather in the evening or in the early morning along the banks of that river and pour out such music as might have made Pan lay aside his reeds and seek some instrument of sweeter sound, or else in despair give up the role of musician. Such rich, golden, ethereal notes I have not heard from any other bird. Should your soul be longing to express some unutterable emotion, some rapturous joy, or holy aspirations, and words are not found to describe them, go forth into the woods where these thrushes sing, fall down in lowly attitude, and let the wood thrush give voice to the emotions, joys, aspirations that words can not convey.

Nest: Much like that of the robin.

ROBIN (*Planesticus migratorius*).

Length: 10 inches. The Robin is as well known as any bird we have, yet I have had persons ask me to point out a robin to them.

Range: North America. Breeds from the limit of trees in Alaska, from Ungava and Newfoundland throughout a greater part of the United States, especially in the east. Not found nesting in many of the Southern States. Found in abundance in every county in West Virginia. While this bird is not very common in the winter, a few may be found hiding away in secluded places in even the most severe winters. During the migration seasons, when so many birds are going to, or returning to their summer home in the far north, they are to be found in very great numbers in our State.

Habits and Usefulness: The food of the robin consists of fruit and insects. When the cherries are ripe he feasts upon them freely and thus comes into bad repute among the fruit-growers. But when he is seen eating insects so diligently or carrying such numbers of them to his hungry young, forgiveness is forthcoming and the theft of a few cherries is forgotten. There seems to be an unusual fondness for robins among the boys and girls. Perhaps this is because of the musical song, the friendly demeanor and the familiar nesting habits of this bird. Of wild fruits the robin has been known to eat the following varieties: wild cherries, wild grapes of several kinds, tupelo or black gum, greenbrier, smilax, poison ivy, common elder, mountain elder, huckleberry, blackberry, cranberry and June berry. Of insects many of the ground-feeding species are destroyed, especially certain kinds that are injurious to grass and other forage crops. It is very interesting to see the large flocks of robins as they come in the spring and cover our meadow and pasture lands, feeding so diligently upon the

insects which they gather from the ground. Then in the autumn when they return from their summer homes, one may find them in equal numbers feeding in the black gum trees, feasting upon the purple berries that grow there.



ROBIN.

Song: Who does not know the robin's song? Who has not heard him call at break of day as he reminds the feathered hosts that, "The early bird catches the worm?" He himself is usually the early bird, and many a worm he gets as a reward for his thriftiness. The various notes of the robin may be learned very easily, since robins are about nearly all the year, and may be studied with so little difficulty.

Nest: The nest of grasses and roots is plastered on the inside with mud, then lined with fine grasses, and may be found in an orchard or shade tree. Nearly every boy and girl in West Virginia must have found a robin's nest, and examined the four or five blue eggs of the greedy little birds. Two or even more broods are hatched in a single season by the same old birds.

